WEST Search History

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		DB=USPT; PLUR=YES; OP=ADJ	
☐	L19	l16 and L18	45
☐	L18	l3 same l2	1191
☐	L17	L16 and l1	56
☐	L16	L15 same l2	67
☐	L15	m7 or "m 7"	9198
☐	L14	L13 and l1 and l6	33
☐	L13	amino or nh2	240979
☐	L12	(L11 same l2) and l1 and l6	12
☐	L11	tenebrionis	274
☐	L10	L9 and l6	15
☐	L9	l2 and l3 and l1 not l7	343
☐	L8	l2 and l7 and l1	16
☐	L7	l5 and L6	16
☐	L6	198?.pray.	355700
☐	L5	L4 and l1	175
☐	L4	L3 with l2	700
☐	L3	truncat$6 or delet$5	157114
☐	L2	toxin or endotoxin	24921
☐	L1	thuringiensis.ti,ab,clm.	651

END OF SEARCH HISTORY

FILE 'REGISTRY' ENTERED AT 08:42:21 ON 14 MAR 2004
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
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STRUCTURE FILE UPDATES: 12 MAR 2004 HIGHEST RN 662722-88-5
DICTIONARY FILE UPDATES: 12 MAR 2004 HIGHEST RN 662722-88-5

TSCA INFORMATION NOW CURRENT THROUGH JANUARY 6, 2004

FILE 'REGISTRY' ENTERED AT 08:42:21 ON 14 MAR 2004
L1 54 S GVVGFPFGGALVS/SQSP

FILE 'CA' ENTERED AT 08:42:58 ON 14 MAR 2004
FILE COVERS 1907 - 11 Mar 2004 VOL 140 ISS 12
FILE LAST UPDATED: 11 Mar 2004 (20040311/ED)

L2 19 S L1

FILE 'REGISTRY' ENTERED AT 08:43:36 ON 14 MAR 2004
L3 49 S L1 AND 585-660/SQL

FILE 'CA' ENTERED AT 08:44:43 ON 14 MAR 2004
L4 17 S L3

FILE 'REGISTRY' ENTERED AT 08:47:05 ON 14 MAR 2004
L5 1 S 110463-24-6/RN
SET NOTICE 1 DISPLAY
SET NOTICE LOGIN DISPLAY
L6 34 S L1 AND 585-643/SQL

FILE 'CA' ENTERED AT 08:49:01 ON 14 MAR 2004
L7 11 S L6

FILE 'REGISTRY' ENTERED AT 08:50:10 ON 14 MAR 2004
L8 1 S 115804-12-1/RN
SET NOTICE 1 DISPLAY
SET NOTICE LOGIN DISPLAY

FILE 'REGISTRY' ENTERED AT 08:51:33 ON 14 MAR 2004
L9 1 S 128123-81-9/RN
SET NOTICE 1 DISPLAY
SET NOTICE LOGIN DISPLAY

FILE 'REGISTRY' ENTERED AT 08:52:00 ON 14 MAR 2004
L10 1 S 124541-32-8/RN
SET NOTICE 1 DISPLAY
SET NOTICE LOGIN DISPLAY

FILE 'REGISTRY' ENTERED AT 08:52:25 ON 14 MAR 2004
L11 1 S 123514-67-0/RN
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SET NOTICE LOGIN DISPLAY

FILE 'REGISTRY' ENTERED AT 08:53:08 ON 14 MAR 2004
L12 1 S 123516-40-5/RN
SET NOTICE 1 DISPLAY
SET NOTICE LOGIN DISPLAY

FILE 'REGISTRY' ENTERED AT 08:53:45 ON 14 MAR 2004
L13 1 S 120313-97-5/RN
SET NOTICE 1 DISPLAY
SET NOTICE LOGIN DISPLAY

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FILE 'REGISTRY' ENTERED AT 08:54:15 ON 14 MAR 2004

FILE 'REGISTRY' ENTERED AT 08:58:09 ON 14 MAR 2004
L14 1 S 112659-37-7/RN
SET NOTICE 1 DISPLAY
SET NOTICE LOGIN DISPLAY

FILE 'REGISTRY' ENTERED AT 08:58:50 ON 14 MAR 2004
L15 1 S 112659-38-8/RN
SET NOTICE 1 DISPLAY
SET NOTICE LOGIN DISPLAY

L2 ANSWER 1 OF 19 CA COPYRIGHT 2004 ACS on STN
TI Identifying and reducing the allergenicity of food proteins
PY 2003

L2 ANSWER 2 OF 19 CA COPYRIGHT 2004 ACS on STN
TI Modified Cry3A toxins having increased toxicity to corn rootworm, their nucleic acid sequences, and methods for controlling plant pests
PY 2003 2003 2003

L2 ANSWER 3 OF 19 CA COPYRIGHT 2004 ACS on STN
TI Kits for the detection of transgenes in food plants for detection of genetically modified organisms in foodstuffs
PY 2001 2002 2002

L2 ANSWER 4 OF 19 CA COPYRIGHT 2004 ACS on STN
TI Fire ant control using a novel <SYM100>-endotoxin from Bacillus thuringiensis
PY 2001 2002 2003 2002 2003

L2 ANSWER 5 OF 19 CA COPYRIGHT 2004 ACS on STN
TI Substitution analogs of CryIIIA <SYM100>-endotoxins with increased effectiveness against Diabrotica
PY 1997

L2 ANSWER 6 OF 19 CA COPYRIGHT 2004 ACS on STN
TI Synthetic insecticidal crystal protein gene for expression in transgenic plants
PY 1996 2002 1999 2002 1995 1995 1996 1996
2000 2000 2000 2004

L2 ANSWER 7 OF 19 CA COPYRIGHT 2004 ACS on STN
TI Elucidation of the mechanism of CryIIIA overproduction in a mutagenized strain of Bacillus thuringiensis var. tenebrionis
PY 1994

L2 ANSWER 8 OF 19 CA COPYRIGHT 2004 ACS on STN
TI Bacillus thuringiensis isolates active against lice.
PY 1993 1993 1993 1996 1994 1998 1998 1998

L2 ANSWER 9 OF 19 CA COPYRIGHT 2004 ACS on STN
TI The reconstruction and expression of a Bacillus thuringiensis cryIIIA gene in protoplasts and potato plants
PY 1993

L2 ANSWER 10 OF 19 CA COPYRIGHT 2004 ACS on STN
TI Extending the host range of insecticidal proteins using peptides that bind gut cells
PY 1991 1992 1991 1999 1992 1994

L2 ANSWER 11 OF 19 CA COPYRIGHT 2004 ACS on STN
TI Synthetic insecticidal crystal protein gene
PY 1990 1990 1995 1990 1995 1996 1996 1990 1992 1990 2000
1990 1999 2002 2000 2000

L2 ANSWER 12 OF 19 CA COPYRIGHT 2004 ACS on STN
TI Cloning and expression in microorganisms of endotoxin gene of Bacillus thuringiensis tenebrionis
PY 1989 1989 1989 1989 1992 1990

L2 ANSWER 13 OF 19 CA COPYRIGHT 2004 ACS on STN
TI Isolation and characterization of EG2158, a new strain of Bacillus thuringiensis toxic to coleopteran larvae, and nucleotide sequence of the toxin gene
PY 1988

L2 ANSWER 14 OF 19 CA COPYRIGHT 2004 ACS on STN
TI Plants transformed with a gene for an insecticidal protein from Bacillus thuringiensis
PY 1989 1989 1989 1989 1989 1990

L2 ANSWER 15 OF 19 CA COPYRIGHT 2004 ACS on STN
TI Cloning of Bacillus thuringiensis tenebionis toxin gene and its use in producing coleoperan insect-resistant plants
PY 1988 1989 1996 2003 1996 1996 1997 1988 1988 1991 1988
1994 1988 1998 1989 1994 2001 1996 1998 2001 1998 2001
2002

L2 ANSWER 16 OF 19 CA COPYRIGHT 2004 ACS on STN
TI Characterization of the coleopteran-specific protein gene of Bacillus thuringiensis var. tenebrionis
PY 1988

L2 ANSWER 17 OF 19 CA COPYRIGHT 2004 ACS on STN
TI Molecular cloning and characterization of the insecticidal crystal protein gene of Bacillus thuringiensis var. tenebrionis
PY 1987

L2 ANSWER 18 OF 19 CA COPYRIGHT 2004 ACS on STN
TI Nucleotide sequence of a gene encoding an insecticidal protein of Bacillus thuringiensis v tenebrionis toxic against Coleoptera
PY 1987

L2 ANSWER 19 OF 19 CA COPYRIGHT 2004 ACS on STN
TI Cloning and expression of Bacillus thuringiensis toxin gene toxic to beetles of the order Coleoptera
PY 1987 1991 1989 1988 1987 1996 1990 1989 1991 1991 1996
1999 1996 1999 1996 1999

L4 ANSWER 1 OF 17 CA COPYRIGHT 2004 ACS on STN
TI Identifying and reducing the allergenicity of food proteins
PY 2003

L4 ANSWER 2 OF 17 CA COPYRIGHT 2004 ACS on STN
TI Modified Cry3A toxins having increased toxicity to corn rootworm, their nucleic acid sequences, and methods for controlling plant pests
PY 2003 2003 2003

L4 ANSWER 3 OF 17 CA COPYRIGHT 2004 ACS on STN
TI Fire ant control using a novel <SYM100>-endotoxin from Bacillus thuringiensis
PY 2001 2002 2003 2002 2003

L4 ANSWER 4 OF 17 CA COPYRIGHT 2004 ACS on STN
TI Substitution analogs of CryIIIA <SYM100>-endotoxins with increased effectiveness again DiabroticaPY 1997

L4 ANSWER 5 OF 17 CA COPYRIGHT 2004 ACS on STN
TI Synthetic insecticidal crystal protein gene for expression in transgenic plants
PY 1996 2002 1999 2002 1995 1995 1996 1996 2000
2000 2000 2004

L4 ANSWER 6 OF 17 CA COPYRIGHT 2004 ACS on STN

TI Elucidation of the mechanism of CryIIIA overproduction in a mutagenized strain of Bacillus thuringiensis var. tenebrionis
PY 1994

L4 ANSWER 7 OF 17 CA COPYRIGHT 2004 ACS on STN
TI Bacillus thuringiensis isolates active against lice.
PY 1993 1993 1993 1996 1994 1998 1998 1998
RN 110463-24-6 RN 130067-79-7 RN 134944-24-4 RN 141093-45-0 RN 141467-09-6
RN 151404-48-7 RN 151404-50-1 RN 151404-53-4 RN 134945-86-1 RN 141467-29-0
RN 151404-45-4 RN 151404-46-5 RN 151404-47-6RN 151404-49-8 RN 151404-51-2
RN 151404-52-3

L4 ANSWER 8 OF 17 CA COPYRIGHT 2004 ACS on STN
TI The reconstruction and expression of a Bacillus thuringiensis cryIIIA gene in protoplasts and potato plants
PY 1993

L4 ANSWER 9 OF 17 CA COPYRIGHT 2004 ACS on STN
TI Synthetic insecticidal crystal protein gene
PY 1990 1990 1995 1990 1995 1996 1996 1990 1992 1990 2000
1990 1999 2002 2000 2000
RN 115804-12-1 RN 128123-81-9 RN 128123-03-5 RN 128123-04-6

L4 ANSWER 10 OF 17 CA COPYRIGHT 2004 ACS on STN
TI Cloning and expression in microorganisms of endotoxin gene of Bacillus thuringiensis tenebrionis

PY 1989 1989 1989 1989 1992 1990
RN 110463-24-6 RN 124541-32-8 RN 112659-24-2 RN 124541-05-5 RN 124541-04-4

L4 ANSWER 11 OF 17 CA COPYRIGHT 2004 ACS on STN
TI Isolation and characterization of EG2158, a new strain of Bacillus thuringiensis toxic to coleopteran larvae, and nucleotide sequence of the toxin gene
PY 1988
RN 110463-24-6 RN 123514-67-0 RN 112659-24-2

L4 ANSWER 12 OF 17 CA COPYRIGHT 2004 ACS on STN
TI Plants transformed with a gene for an insecticidal protein from Bacillus thuringiensis
PY 1989 1989 1989 1989 1989 1990
RN 123516-40-5 RN 123516-11-0 RN 62213-36-9

L4 ANSWER 13 OF 17 CA COPYRIGHT 2004 ACS on STN
TI Cloning of Bacillus thuringiensis tenebionis toxin gene and its use in producing coleoperan insect-resistant plants
PY 1988 1989 1996 2003 1996 1996 1997 1988 1988 1991 1988
1994 1988 1998 1989 1994 2001 1996 1998 2001 1998 2001
2002
RN 120313-96-4 RN 120313-97-5 RN 120313-98-6 RN 120313-99-7 RN 120314-00-3
RN 120314-01-4 RN 9027-23-0 RN 108281-08-9 RN 120313-68-0 RN 120313-69-1
RN 120313-70-4

L4 ANSWER 14 OF 17 CA COPYRIGHT 2004 ACS on STN

TI Characterization of the coleopteran-specific protein gene of Bacillus thuringiensis var. tenebrionis
PY 1988
RN 115804-12-1 RN 112659-37-7 RN 112659-24-2 RN 115803-70-8

L4 ANSWER 15 OF 17 CA COPYRIGHT 2004 ACS on STN
TI Molecular cloning and characterization of the insecticidal crystal protein gene of Bacillus thuringiensis var. tenebrionis
PY 1987
RN 110463-24-6 RN 112659-24-2

L4 ANSWER 16 OF 17 CA COPYRIGHT 2004 ACS on STN
TI Nucleotide sequence of a gene encoding an insecticidal protein of Bacillus thuringiensis v tenebrionis toxic against Coleoptera
PY 1987
RN 112659-37-7 RN 112659-38-8 RN 112659-24-2

L4 ANSWER 17 OF 17 CA COPYRIGHT 2004 ACS on STN
TI Cloning and expression of Bacillus thuringiensis toxin gene toxic to beetles of the order Coleoptera
PY 1987 1991 1989 1988 1987 1996 1990 1989 1991 1991
1996 1999 1996 1999 1996 1999
RN 110463-24-6

L5 ANSWER 1 OF 1 REGISTRY COPYRIGHT 2004 ACS on STN
RN 110463-24-6 REGISTRY
CN Toxin, endo- (Bacillus thuringiensis strain M-7 clone pCH-B3 parasporal crystal precursor reduced) (9CI) (CA INDEX NAME)
OTHER NAMES:
CN <SYM100>-Endotoxin CryIIIA (Bacillus thuringiensis tenebrionis strain NB176)
CN Toxin, <SYM100>-endo- (Bacillus thuringiensis tenebrionis strain NB176 gene cryIIIA parasporal crystal)
FS PROTEIN SEQUENCE
SQL 644

```
SEQ   1 MNPNNRSEHD TIKTTENNEV PTNHVQYPLA ETPNPTLEDL NYKEFLRMTA
     51 DNNTEALDSS TTKDVIQKGI SVVGDLLGVV GFPFGGALVS FYTNFLNTIW
    101 PSEDPWKAFM EQVEALMDQK IADYAKNKAL AELQGLQNNV EDYVSALSSW
    151 QKNPVSSRNP HSQGRIRELF SQAESHFRNS MPSFAISGYE VLFLTTYAQA
    201 ANTHLFLLKD AQIYGEEWGY EKEDIAEFYK RQLKLTQEYT DHCVKWYNVG
    251 LDKLRGSSYE SWVNFNRYRR EMTLTVLDLI ALFPLYDVRL YPKEVKTELT
    301 RDVLTDPIVG VNNLRGYGTT FSNIENYIRK PHLFDYLHRI QFHTRFQPGY
    351 YGNDSFNYWS GNYVSTRPSI GSNDIITSPF YGNKSSEPVQ NLEFNGEKVY
    401 RAVANTNLAV WPSAVYSGVT KVEFSQYNDQ TDEASTQTYD SKRNVGAVSW
    451 DSIDQLPPET TDEPLEKGYS HQLNYVMCFL MQGSRGTIPV LTWTHKSVDF
    501 FNMIDSKKIT QLPLVKAYKL QSGASVVAGP RFTGGDIIQC TENGSAATIY
    551 VTPDVSYSQK YRARIHYAST SQITFTLSLD GAPFNQYYFD KTINKGDTLT
    601 YNSFNLASFS TPFELSGNNL QIGVTGLSAG DKVYIDKIEF IPVN
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RELATED SEQUENCES AVAILABLE WITH SEQLINK
MF Unspecified
CI MAN
SR CA
LC STN Files: CA, CAPLUS, TOXCENTER, USPATFULL
7 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
7 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L7 ANSWER 1 OF 11 CA COPYRIGHT 2004 ACS on STN
TI Modified Cry3A toxins having increased toxicity to corn rootworm, their nucleic acid sequences, and methods for controlling plant pests
PY 2003 2003 2003

L7 ANSWER 2 OF 11 CA COPYRIGHT 2004 ACS on STN
TI Fire ant control using a novel <SYM100>-endotoxin from Bacillus thuringiensis
PY 2001 2002 2003 2002 2003

L7 ANSWER 3 OF 11 CA COPYRIGHT 2004 ACS on STN
TI Synthetic insecticidal crystal protein gene for expression in transgenic plants
PY 1996 2002 1999 2002 1995 1995 1996 1996 2000 2000 2000 2004

L7 ANSWER 4 OF 11 CA COPYRIGHT 2004 ACS on STN
TI The reconstruction and expression of a Bacillus thuringiensis cryIIIA gene in protoplasts and potato plants
PY 1993

L7 ANSWER 5 OF 11 CA COPYRIGHT 2004 ACS on STN
AN 113:38937 CA
TI Synthetic insecticidal crystal protein gene
IN Adang, Michael J.; Rocheleau, Thomas A.; Merlo, Donald J.; Murray, Elizabeth E.
PA Lubrizol Genetics, Inc., USA
SO Eur. Pat. Appl., 30 pp. CODEN: EPXXDW
DT Patent LA English
FAN.CNT 7

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 359472	A2	19900321	EP 1989-309069	19890907
	EP 359472	A3	19900725		
	EP 359472	B1	19951227		
	R: AT, BE, CH, DE, ES, FR, GB, GR, IT, LI, LU, NL, SE				
	ZA 8906562	A	19900530	ZA 1989-6562	19890828
	EP 682115	A1	19951115	EP 1995-201374	19890907
	R: AT, BE, CH, DE, ES, FR, GB, GR, IT, LI, LU, NL, SE				
	AT 132193	E	19960115	AT 1989-309069	19890907
	ES 2083384	T3	19960416	ES 1989-309069	19890907
	AU 8941182	A1	19900315	AU 1989-41182	19890908
	AU 623429	B2	19920514		
	CN 1044298	A	19900801	CN 1989-107153	19890909
	CN 1056880	B	20000927		
	JP 02186989	A2	19900723	JP 1989-235472	19890911
	JP 11266882	A2	19991005	JP 1998-356822	19890911
	JP 2002176995	A2	20020625	JP 2001-322905	19890911
	US 6013523	A	20000111	US 1996-704966	19960829
	CN 1263946	A	20000823	CN 1999-127489	19991230
PRAI	US 1988-242482	A	19880909		

earliest U.S. priority 9/88

EP 1989-309069 A3 19890907
JP 1989-235472 A3 19890911
JP 1998-356822 A3 19890911
US 1992-827844 B1 19920128
US 1993-57191 A3 19930503
US 1995-369839 A3 19950106
RN 115804-12-1 RN 128123-81-9 RN 128123-03-5 RN 128123-04-6 see L8 S9 | S97

L7 ANSWER 6 OF 11 CA COPYRIGHT 2004 ACS on STN
AN 112:31703 CA
TI Cloning and expression in microorganisms of endotoxin gene of Bacillus thuringiensis tenebrionis
IN Sekar, Vaithlingham; Adang, Michael J.
PA Lubrizol Genetics, Inc., USA
SO Eur. Pat. Appl., 29 pp. CODEN: EPXXDW
DT Patent LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 318143	A2	19890531	EP 1988-309438	19881010
	EP 318143	A3	19890607		
	R: AT, BE, CH, DE, ES, FR, GB, GR, IT, LI, LU, NL, SE				
	ZA 8807480	A	19890726	ZA 1988-7480	19881005
	AU 8823651	A1	19890413	AU 1988-23651	19881012
	AU 626804	B2	19920813		
	JP 02092287	A2	19900403	JP 1988-259289	19881013
PRAI	US 1987-108285		19871013		

earliest US priority after f.d.

RN 110463-24-6 RN ~~124541-32-6 RN~~ 112659-24-2 RN 124541-05-5 RN 124541-04-4

L7 ANSWER 7 OF 11 CA COPYRIGHT 2004 ACS on STN
AN 111:209800 CA
TI Isolation and characterization of EG2158, a new strain of Bacillus thuringiensis toxic to coleopteran larvae, and nucleotide sequence of the toxin gene
AU Donovan, William P.; Gonzalez, Jose M.; Gilbert, M. Pearce; Dankocsik, Cathy
CS Ecogen Inc., Langhorne, PA, 19047, USA
SO Molecular and General Genetics (1988), 214(3), 365-72 CODEN: MGGEAE; ISSN: 0026-8925
DT Journal LA English
RN 110463-24-6RN 123514-67-0 RN 112659-24-2

L7 ANSWER 8 OF 11 CA COPYRIGHT 2004 ACS on STN
AN 111:188783 CA
TI Plants transformed with a gene for an insecticidal protein from Bacillus thuringiensis
IN Vaeck, Mark; Hofte, Hermanus; Botterman, Johan
PA Plant Genetic Systems N. V., Belg.
SO Eur. Pat. Appl., 22 pp. CODEN: EPXXDW
DT Patent LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 305275	A2	19890301	EP 1988-402115	19880816
	EP 305275	A3	19890614		
	R: AT, BE, CH, DE, ES, FR, GB, GR, IT, LI, LU, NL, SE				
	WO 8901515	A2	19890223	WO 1988-EP752	19880815
	WO 8901515	A3	19890601		
	W: AU, JP, US				
	AU 8822572	A1	19890309	AU 1988-22572	19880815
	JP 02500566	T2	19900301	JP 1988-506676	19880815
PRAI	GB 1987-19414		19870817		
	GB 1987-30261		19871229		
	WO 1988-EP752		19880815		

RN 123516-40-5 RN 123516-11-0 RN 62213-36-9

L7 ANSWER 9 OF 11 CA COPYRIGHT 2004 ACS on STN
AN 110:187338 CA
TI Cloning of Bacillus thuringiensis tenebionis toxin gene and its use in producing coleoperan insect-resistant plants
IN Fischhoff, David Allen; Fuchs, Roy Lee; McPherson, Sylvia Ann; Lavrik, Paul Bruno; Perlak, Frederick Joseph
PA Monsanto Co., USA
SO Eur. Pat. Appl., 52 pp. CODEN: EPXXDW
DT Patent LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 289479	A2	19881102	EP 1988-870070	19880426
	EP 289479	A3	19890628		
	EP 289479	B1	19961106		
	EP 289479	B2	20030910		
	R: AT, BE, CH, DE, ES, FR, GB, GR, IT, LI, LU, NL, SE				
	EP 731170	A1	19960911	EP 1996-100978	19880426
	R: AT, BE, CH, DE, ES, FR, GB, GR, IT, LI, LU, NL, SE				
	AT 144995	E	19961115	AT 1988-870070	19880426
	ES 2094722	T3	19970201	ES 1988-870070	19880426
	DK 8802340	A	19881031	DK 1988-2340	19880428
	AU 8815273	A1	19881103	AU 1988-15273	19880428
	AU 610157	B2	19910516		
	CN 88102497	A	19881123	CN 1988-102497	19880428
	CN 1026497	B	19941109		
	JP 63287488	A2	19881124	JP 1988-107503	19880428
	JP 2815047	B2	19981027		
	ZA 8803049	A	19890222	ZA 1988-3049	19880428
	RU 2025486	C1	19941230	RU 1988-4355607	19880428
	JP 2001112490	A2	20010424	JP 2000-272128	19880428
	US 5495071	A	19960227	US 1993-72281	19930604
	US 5763241	A	19980609	US 1996-759446	19961205
	US 6284949	B1	20010904	US 1998-27998	19980223
	JP 10323138	A2	19981208	JP 1998-101210	19980413
	JP 3122642	B2	20010109		
	US 2002152496	A1	20021017	US 2001-943692	20010831
PRAI	US 1987-44081	A	19870429		
	EP 1988-870070	A3	19880426		
	JP 1988-107503	A3	19880428		
	JP 1998-101210	A3	19880428		
	US 1990-523284	B1	19900514		
	US 1993-72281	A3	19930604		
	US 1995-435101	B1	19950504		
	US 1996-759446	A1	19961205		
	US 1998-27998	A3	19980223		

RN 120313-96-4 RN 120313-97-5 RN 120313-98-6 RN 120313-99-7 RN 120314-00-3 RN 120314-01-4 RN 9027-23-0
RN 108281-08-9 RN 120313-68-0 RN 120313-69-1 RN 120313-70-4

L7 ANSWER 10 OF 11 CA COPYRIGHT 2004 ACS on STN
AN 109:87114 CA
TI Characterization of the coleopteran-specific protein gene of Bacillus thuringiensis var. tenebrionis
AU McPherson, Sylvia A.; Perlak, Frederick J.; Fuchs, Roy L.; Marrone, Pamela G.; Lavrik, Paul B.; Fischhoff, David A.
CS Monsanto Co., St. Louis, MO, 63198, USA
SO Bio/Technology (1988), 6(1), 61-6 CODEN: BTCHDA; ISSN: 0733-222X
DT Journal LA English
RN 115804-12-1 RN 112659-37-7 RN 112659-24-2 RN 115803-70-8

L7 ANSWER 11 OF 11 CA COPYRIGHT 2004 ACS on STN
AN 108:69763 CA
TI Nucleotide sequence of a gene encoding an insecticidal protein of Bacillus thuringiensis var. tenebrionis toxic against Coleoptera
AU Hoefte, Herman; Seurinck, Jef; Van Houtven, Annemie; Vaeck, Mark
CS Plant Genet. Syst., N. V., Ghent, 9000, Belg.
SO Nucleic Acids Research (1987), 15(17), 7183 CODEN: NARHAD; ISSN: 0305-1048
DT Journal LA English
RN 112659-37-7 RN 112659-38-8 RN 112659-24-2 < pub 9/87

L8 ANSWER 1 OF 1 REGISTRY COPYRIGHT 2004 ACS on STN
RN 115804-12-1 REGISTRY
CN Toxin, endo- (Bacillus thuringiensis tenebrionis plasmid clone pMON5456 parasporal crystal reduced) (9CI) (CA INDEX NAME)
FS PROTEIN SEQUENCE
SQL 597

SEQ 1 MTADNNTEAL DSSTTKDVIQ KGISVVGDLL GVVGFPFGGA LVSFYTNFLN
51 TIWPSEDPWK AFMEQVEALM DQKIADYAKN KALAELQGLQ NNVEDYVSAL
101 SSWQKNPVSS RNPHSQGRIR ELFSQAESHF RNSMPSFAIS GYEVLFLTTY
151 AQAANTNLFL LKDAQIYGEE WGYEKEDIAE FYKRQLKLTQ EYTDHCVKWY
201 NVGLDKLRGS SYESWVNFNR YRREWTLTVL DLIALFPLYD VRLYPKEVKT
251 ELTRDVLTDP IVGVNNLRGY GTTFSNIENY IRKPHLFDYL HRIQFHTRFQ
301 PGYYGNDSFN YWSGNYVSTR PSIGSNDIIT SPFYGNKSSE PVQNLEFNGE
351 KVYRAVANTN LAVWPSAVYS GVTKVEFSQY NDQTDEASTQ TYDSKRNVGA
401 VSWDSIDQLP PETTDEPLEK GYSHQLNYVM CFLWQGSRGT IPVLTWTHKS
451 VDFFNMIDSK KITQLPLVKA YKLQSGASVV AGPRFTGGDI IQCTENGSAA
501 TIYVTPDVSY SQKYRARIHY ASTSQITFTL SLDGAPFNQY YFDKTINKGD
551 TLTYNSFNLA SFSTPFELSG NNLQIGVTGL SAGDKVYIDK IEFIPVN
MF Unspecified
CI MAN
SR CA
LC STN Files: CA, CAPLUS, TOXCENTER
2 REFERENCES IN FILE CA (1907 TO DATE)
2 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L9 ANSWER 1 OF 1 REGISTRY COPYRIGHT 2004 ACS on STN
RN 128123-81-9 REGISTRY
CN Toxin, endo- (Bacillus thuringiensis tenebrionis plasmid clone pMON5456 parasporal crystal reduced) 2-L-alanine-597a-L-leucine-597b-L-arginine-597c-L-serine-597d-L-proline-597e-glycine-597f-L-threonine-597g-L-glutamicacid-597h-L-leucine-597i-L-glutamic acid-597j-L-phenylalanine-597k-L- isoleucine-597l-aspartic acid-597m-L-isoleucine- (9CI) (CA INDEX NAME)
FS PROTEIN SEQUENCE
SQL 610

SEQ 1 HAADHWTEAL DSSTTKDVIQ KGISVVGDLL GVVGFPFGGA LVSFYTWFLW
51 TIWPSEDPWK AFMEQVEALM DQKIADYAKW KALAELQGLQ WHVEDYVSAL
101 SSWQKHPVSS RHPHSQGRIR ELFSQAESHF RWSMPSFAIS GYEVLFLTTY
151 AQAAWTHLFL LKDAQIYGEE WGYEKEDIAE FYKRQLKLTQ EYTDHCVKWY
201 WVGLDKLRGS SYESWVNFWR YRREMTLTVL DLIALFPLYD VRLYPKEVKT
251 ELTRDVLTDP IVGVWWLRGY GTTFSWYIEN YIRKPHLFDY LNRIQFHTRF
301 QPGYYGMDSF WYWSGNYVST RPSIGSWDII TSPFYGWKSS EPVQMLEFWG
351 EKVYRAVAMT MLAVWPSAVY SGVTKVEFSQ YMDQTDASTQ TYDSKRMVGA
401 VSWDSIDQLP PETTDEPLEK GYSMQLMYVM CFLMQGSRGT IPVLTWTKES
451 VDFFKMIDSE KKITQLPLVK AYKLQSGASV VAGPRFTGGD IIQCTEMGSA
501 ATIYVTPDVS YSQKYRARIM YASTSQITFT LSLDAPFWQY YFDKTIMKGD
551 TLTYMSFMLA SFSTPFELSG WWLQIGVTGL SAGDKVYIDK IEFIPVHLRS
601 PGTELEFIDI
MF Unspecified
CI MAN
SR CA
LC STN Files: CA, CAPLUS, TOXCENTER
1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L10 ANSWER 1 OF 1 REGISTRY COPYRIGHT 2004 ACS on STN
RN 124541-32-8 REGISTRY
CN 47-644-Toxin, endo- (Bacillus thuringiensis tenebrionis parasporal crystal precursor reduced) (9CI) (CA INDEX NAME)
FS PROTEIN SEQUENCE
SQL 598

SEQ 1 RMTADNNTEA LDSSTTKDVI QKGISVVGDL LGVVGFPFGG ALVSFYTNFL
51 NTIWPSEDPW KAFMEQVEAL MDQKIADYAK NKALAELQGL QNNVEDYVSA
101 LSSWQKNPVS SRNPHSQGRI RELFSQAESH FRNSMPSFAI SGYEVLFLTT
151 YAQAANTHLF LLKDAQIYGE EWGYEKEDIA EFYKRQLKLT QEYTDHCVKW
201 YNVGLDKLRG SSYESWVNFN RYRREMTLTV LDLIALFPLY DVRLYPKEVK
251 TELTRDVLTD PIVGVNNLRG YGTTFSNIEN YIRKPHLFDY LHRIQFHTRF
301 QPGYYGNDSF NYWSGNYVST RPSIGSNDII TSPFYGNKSS EPVQNLEFNG
351 EKVYRAVANT NLAVWPSAVY SGVTKVEFSQ YNDQTDEAST QTYDSKRNVG
401 AVSWDSIDQL PPETTDEPLE KGYSHQLNYV MCFLMQGSRG TIPVLTWTHK
451 SVDFFNMIDS KKITQLPLVK AYKLQSGASV VAGPRFTGGD IIQCTENGSA
501 ATIYVTPDVS YSQKYRARIH YASTSQITFT LSLDGAPFNQ YYFDKTINKG
551 DTLTYNSFNL ASFSTPFELS GNNLQIGVTG LSAGDKVYID KIEFIPVN
MF Unspecified
CI MAN
SR CA
LC STN Files: CA, CAPLUS, TOXCENTER
1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L11 ANSWER 1 OF 1 REGISTRY COPYRIGHT 2004 ACS on STN
RN 123514-67-0 REGISTRY
CN Toxin, endo- (Bacillus thuringiensis strain EG2158 plasmid clone pEG212 parasporal crystal reduced) (9CI (CA INDEX NAME)
FS PROTEIN SEQUENCE
SQL 594

SEQ 1 TEALDSSTTK DVIQKGISVV GDLLGVVGFP FGGALVSFYT NFLNTIWPSE
51 DPWKAFMEQV EALMDQKIAD YAKNKALAEL QGLQNNVEDY VSALSSWQKN
101 PVSSRNPHSQ GRIRELFSQA ESHFRNSMPS TAISGYEVLF LTTYAQAANT
151 HLFLLKDAQI YGEEWGYEKE DIAEFYKRQL KLTQEYTDHC VKWYNVGLDK
201 LRGSSYESWV NFNRYRREMT LTVLDLIALF PLYDVRLYPK EVKTELTRDV
251 LTDPIVGVNN LREYGTTFSN IENYIRKPHL FDYLHRIQFH TRFQPGYYGN
301 DSFNYWSGNY VSTRPSIGSN DIITSPFYGN KSSGPVQNLE FNGEKVYRAV
351 ANTNLAVWPS AVYSGVTKVE FSQYNDQTDE ASTQTYDSKR NVGAVSWDSI
401 DQLPPETTDE PLEKGYSHQL NYVMCFLMQG SRGTIPVLTW THKSVDFFNM
451 IDSKKITQLP LVKAYKAYKL QSGASVVAGP RFTGGDIIQC TENGSAATIY
501 VTPDVSYSQK YRARIHYAST SQITFTLSLD GAPFNQYYFD KTINKGDTLT
551 YNSFNLASFS TPFELSGNNL QIGVTGLSAG DKVYIDKIEF IPVN
MF Unspecified
CI MAN
SR CA
LC STN Files: CA, CAPLUS, TOXCENTER
1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L12 ANSWER 1 OF 1 REGISTRY COPYRIGHT 2004 ACS on STN
RN 123516-40-5 REGISTRY
CN 8-594-Toxin, endo- (Bacillus thuringiensis tenebrionis parasporal crystal reduced (9CI) (CA INDEX NAME)
FS PROTEIN SEQUENCE
SQL 587

SEQ 1 DSSTTKDVIQ KGISVVGDLL GVVGFPFGGA LVSFYTNFLN TIWPSEDPWK
51 AFMEQVEALM DQKIADYAKN KALAELQGLQ NNVEDYVSAL SSWQKNPVSS
101 RNPHSQGRIR ELFSQAESHF RNSMPSFAIS GYEVLFLTTY AQAANTHLFL
151 LKDAQIYGEE WGYEKEDIAE FYKRQLKLTQ EYTNHCVKWY NVGLDKLRGS
201 SYESWVNFNR YRREMTLTVL DLIALFPLYD VRLYPKEVKT ELTRDVLTDP
251 IVGVNNLRGY GTTFSNIENY IRKPHLFDYL HRIQFHTRFQ PGYYGNDSFN
301 YWSGNYVSTR PSIGSNDIIT SPFYGNKSSE PVQNLEFNGE KVYRAVANTN
351 LAVWPSAVYS GVTKVEFSQY NDQTDEASTQ TYDSKRNVGA VSWDSIDQLP
401 PETTDEPLEK GYSHQLNYVM CFLMQGSRGT IPVLTWTHKS VDFFNMIDSK
451 KITQLPLVKA YKLQSGASVV AGPRFTGGDI IQCTENGSAA TIYVTPDVSY
501 SQKYRARIHY ASTSQITFTL SLDGAPFNQY YFDKTINKGD TLTYNSFNLA
551 SFSTPFELSG NNLQIGVTGL SAGDKVYIDK IEFIPVN
MF Unspecified
CI MAN
SR CA
LC STN Files: CA, CAPLUS, TOXCENTER
1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L13 ANSWER 1 OF 1 REGISTRY COPYRIGHT 2004 ACS on STN
RN 120313-97-5 REGISTRY
CN 16-644-Toxin, endo- (Bacillus thuringiensis tenebrionis plasmid clone pMON5420/pMON5421 parasporal crystal precursor reduced) (9CI) (CA INDEX NAME)
FS PROTEIN SEQUENCE
SQL 629

SEQ 1 ENNEVPTNHV QYPLAETPNP TLEDLNYKEF LRMTADNNTE ALDSSTTKDV
51 IQKGISVVGD LLGVVGFPFG GALVSFYTNF LNTIWPSEDP WKAFMEQVEA
101 LMDQKIADYA KNKALAELQG LQNNVEDYVS ALSSWQKNPV SSRNPHSQGR
151 IRELFSQAES HFRNSMPSFA ISGYEVLFLT TYAQAANTHL FLLKDAQIYG
201 EEWGYEKEDI AEFYKRQLKL TQEYTDHCVK WYNVGLDKLR GSSYESWVNF
251 NRYRREMTLT VLDLIALFPL YDVRLYPKEV KTELTRDVLT DPIVGVNNLR
301 GYGTTFSNIE NYIRKPHLFD YLHRIQFHTR FQPGYYGNDS FNYWSGNYVS
351 TRPSIGSNDI ITSPFYGNKS SEPVQNLEFN GEKVYRAVAN TNLAVWPSAV
401 YSGVTKVEFS QYNDQTDEAS TQTYDSKRNV GAVSWDSIDQ LPPETTDEPL
451 EKGYSHELNY VMCFLMQGSR GTIPVLTWTH KSVDFFNMID SKKITQLPLV
501 KAYKLQSGAS VVAGPRFTGG DIIQCTENGS AATIYVTPDV SYSQKYRARI
551 HYASTSQITF TLSLDGAPFN QYYFDKTINK GDTLTYNSFN LASFSTPFEL
601 SGNNLQIGVT GLSAGDKVYI DKIEFIPVN
MF Unspecified
CI MAN
SR CA
LC STN Files: CA, CAPLUS, TOXCENTER, USPATFULL
1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L14 ANSWER 1 OF 1 REGISTRY COPYRIGHT 2004 ACS on STN
RN 112659-37-7 REGISTRY
CN Toxin, endo- (Bacillus thuringiensis tenebrionis parasporal crystal precursor reduced) (9CI) (CA INDEX NAME)
FS PROTEIN SEQUENCE
SQL 643

SEQ 1 MNPNNRSEHD TIKTTENNEV PTNHVQYPLA ETPNPTLEDL NYKEFLRMTA
51 DNNTEALDSS TTKDVIQKGI SVVGDLLGVV GFPFGGALVS FYTNFLNTIW
101 PSEDPWKAFM EQVEALMDQK IADYAKNKAL AELQGLQNNV EDYVSALSSW
151 QKNPVSSRNP HSQGRIRELF SQAESHFRNS MPSFAISGYE VLFLTTYAQA
201 ANTHLFLLKD AQIYGEEWGY EKEDIAEFYK RQLKLTQEYT DHCVKWYNVG
251 LDKLRGSSYE SWVNFNRYRR EMTLTVLDLI ALFPLYDVRL YPKEVKTELT
301 RDVLTDPIVG VNNLRGYGTF SNIENYIRKP HLFDYLHRIQ FHTRFQPGYY
351 GNDSFNYWSG NYVSTRPSIG SNDIITSPFY GNKSSEPVQN LEFNGEKVYR
401 AVANTNLAVW PSAVYSGVTK VEFSQYNDQT DEASTQTYDS KRNVGAVSWD
451 SIDQLPPETT DEPLEKGYSH QLNYVMCFLM QGSRGTIPVL TWTHKSVDFF
501 NMIDSKKITQ LPLVKAYKLQ SGASVVAGPR FTGGDIIQCT ENGSAATIYV
551 TPDVSYSQKY RARIHYASTS QITFTLSLDG APFNQYYFDK TINKGDTLTY
601 NSFNLASFST PFELSGNNLQ IGVTGLSAGD KVYIDKIEFI PVN
MF Unspecified
CI MAN
SR CA
LC STN Files: CA, CAPLUS, TOXCENTER
2 REFERENCES IN FILE CA (1907 TO DATE)
2 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L15 ANSWER 1 OF 1 REGISTRY COPYRIGHT 2004 ACS on STN
RN 112659-38-8 REGISTRY
CN Toxin, endo- (Bacillus thuringiensis tenebrionis parasporal crystalreduced) (9CI) (CA INDEX NAME)
FS PROTEIN SEQUENCE
SQL 594

SEQ 1 DNNTEALDSS TTKDVIQKGI SVVGDLLGVV GFPFGGALVS FYTNFLNTIW
51 PSEDPWKAFM EQVEALMDQK IADYAKNKAL AELQGLQNNV EDYVSALSSW
101 QKNPVSSRNP HSQGRIRELF SQAESHFRNS MPSFAISGYE VLFLTTYAQA
151 ANTHLFLLKD AQIYGEEWGY EKEDIAEFYK RQLKLTQEYT DHCVKWYNVG
201 LDKLRGSSYE SWVNFNRYRR EMTLTVLDLI ALFPLYDVRL YPKEVKTELT
251 RDVLTDPIVG VNNLRGYGTT FSNIENYIRK PHLFDYLHRI QFHTRFQPGY
301 YGNDSFNYWS GNYVSTRPSI GSNDIITSPF YGNKSSEPVQ NLEFNGEKVY
351 RAVANTNLAV WPSAVYSGVT KVEFSQYNDQ TDEASTQTYD SKRNVGAVSW
401 DSIDQLPPET TDEPLEKGYS HQLNYVMCFL MQGSRGTIPV LTWTHKSVDF
451 FNMIDSKKIT QLPLVKAYKL QSGASVVAGP RFTGGDIIQC TENGSAATIY
501 VTPDVSYSQK YRARIHYAST SQITFTLSLD GAPFNQYYFD KTINKGDTLT
551 YNSFNLASFS TPFELSGNNL QIGVTGLSAG DKVYIDKIEF IPVN
MF Unspecified
CI MAN
SR CA
LC STN Files: CA, CAPLUS, TOXCENTER
1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

14mar04 07:37:02 User208600 Session D1615.1
File 155:MEDLINE(R) 1966-2004/Mar W1 (c) format only 2004 The Dialog Corp.

Set	Items	Description
S1	3029	THURINGIENSIS
S2	53940	TOXIN
S3	721	S1 AND S2
S4	56124	PROTEOL?
S5	72	S3 AND S4
S6	98699	FRAGMENT
S7	52	S3 AND S6
S8	43	S7 NOT S5

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Biochemical characterization of Bacillus thuringiensis cytolytic toxins in association with a phospholipid bilayer. Feb 15 1999

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The Bacillus thuringiensis delta-endotoxin. Evidence for a two domain structure of the minimal toxic fragment.
Convents D; Houssier C; Lasters I; Lauwereys M
Plant Genetic Systems, Gent, Belgium.
Journal of biological chemistry (UNITED STATES) Jan 25 1990, 265 (3) p1369-75, ISSN 0021-9258 Journal Code: 2985121R Document type: Journal Article Languages: ENGLISH Main Citation Owner: NLM Record type: Completed
The conformational characteristics of the minimal toxic fragment of the delta-endotoxin from Bacillus thuringiensis berline 1715 were examined by fluorescence and circular dichroism spectroscopy. This insecticidal protein, specifically toxic to lepidopteran species, was found to consist of two structural domains. Experimental evidence for this conclusion was provide by biphasic guanidine hydrochloride unfolding curves at different pH values and electrophoretic patterns of protease digest Two stable fragments of comparable molecular weight were obtained using four different broad specificity proteolytic enzymes. A secondary structure model was constructed using seven B. thuringiensis toxin sequences. These toxins were selected on the basis of their limited sequence homology and represent all known insecticidal specificities. Despite this divergence, a consensus secondary structure pattern was obtained, confirming the structural homology among the toxi The N-terminal halves of all toxins are predicted to be relatively rich in alpha-helix structure and the C-terminal parts to contain alternating beta-strand and coil structures. The latter seems characteristic for a beta-sheet conformation. Comparing model to the unfolding data obtained by circular dichroism, whose far UV signal gives a measure of the alpha-helix conte allowed us to delineate the structural domains into the primary structure. Record Date Created: 19900221 Record Date Completed: 19900221

5/7/60 DIALOG(R)File 155:MEDLINE(R)
08262992 PMID: 2549968
Proteolytic processing of a coleopteran-specific delta-endotoxin produced by Bacillus thuringiensis var. tenebrionis.
Carroll J; Li J; Ellar D J
Department of Biochemistry, University of Cambridge, U.K.
Biochemical journal (ENGLAND) Jul 1 1989, 261 (1) p99-105, ISSN 0264-6021 Journal Code: 2984726R
Document type: Journal Article Languages: ENGLISH Main Citation Owner: NLM Record type: Completed
Insecticidal protein delta-endotoxin crystals harvested from sporulated cultures of Bacillus thuringiensis var. tenebrionis contain a major polypeptide of 67 kDa and minor polypeptides of 73, 72, 55 and 46 kDa. During sporulation, only the 73 kD polypeptide could be detected at stage I. The 67 kDa polypeptide was first detected at stage II and increased in concentratio throughout the later stages of sporulation and after crystal release, with a concomitant decrease in the 73 kDa polypeptide. Th change could be blocked by the addition of proteinase inhibitors. Trypsin or insect-gut-extract treatment of the delta-endotoxin crystals after solubilization resulted in a cleavage product of 55 kDa with asparagine-159 of the deduced amino acid sequence of the toxin [Hofte, Seurinck, van Houtven & Vaeck (1987) Nucleic Acids Res. 15, 71-83; Sekar, Thompso Maroney, Bookland & Adang (1987) Proc. Natl. Acad. Sci. U.S.A. 84, 7036-7040; McPherson, Perlak, Fuchs, Marrone Lavrik & Fischhoff (1988) Biotechnology 6, 61-66] at the N-terminus. This polypeptide was found to be as toxic in vivo as nativ delta-endotoxin. Record Date Created: 19890927 Record Date Completed: 19890927

5/7/69 DIALOG(R)File 155:MEDLINE(R)
07012872 PMID: 3909962
Protease activation of the entomocidal protoxin of Bacillus thuringiensis subsp. kurstaki.
Andrews R E; Bibilos M M; Bulla L A
Applied and environmental microbiology (UNITED STATES) Oct 1985, 50 (4) p737-42, ISSN 0099-2240 Journal Code 7605801 Document type: Journal Article Languages: ENGLISH Main Citation Owner: NLM Record type: Completed

Two isolates of Bacillus thuringiensis subsp. kurstaki were examined which produced different levels of intracellular proteases. Although the crystals from both strains had comparable toxicity, one of the strains, LB1, had a strong polypeptide band at 68,000 molecular weight in the protein from the crystal; in the other, HD251, no such band was evident. When the intracellular proteases in both strains were measured, strain HD251 produced less than 10% of the proteolytic activity found in LB1. These proteases were primarily neutral metalloproteases, although low levels of other proteases were detected. In LB1, the synthesis of protease increased as the cells began to sporulate; however, in HD251, protease activity appeared much later in the sporulation cycle. The protease activity in strain LB1 was very high when the cells were making crystal toxin , whereas in HD251 reduced proteolytic activity was present during crystal toxin synthesis. The insecticidal toxin (molecular weight, 68,000) from both strains could be prepared by cleaving the protoxin (molecular weight, 135,000) with trypsin, followed by ion-exchange chromatography. The procedure described gave quantitative recovery of toxic activity, and approximately half of the total protein was recovered. Calculations show that these results correspond to stoichiometric conversion of protoxin to insecticidal toxin . The toxicities of whole crystals, soluble crystal protein, and purified toxin from both strains were comparable. Record Date Created: 19860130 Record Date Completed: 19860130

5/7/68 DIALOG(R)File 155:MEDLINE(R) (c) format only 2004 The Dialog Corp. All rts. reserv.
07102416 PMID: 3009187
Specificity of Bacillus thuringiensis var. colmeri insecticidal delta-endotoxin is determined by differential proteolytic processing of the protoxin by larval gut proteases.
Haider M Z; Knowles B H; Ellar D J
European journal of biochemistry / FEBS (GERMANY, WEST) May 2 1986, 156 (3) p531-40, ISSN 0014-2956 Journal Code: 0107600 Document type: Journal Article Languages: ENGLISH Main Citation Owner: NLM Record type: Completed
The native crystal delta-endotoxin produced by Bacillus thuringiensis var. colmeri, serotype 21, is toxic to both lepidopteran (Pieris brassicae) and dipteran (Aedes aegypti) larvae. Solubilization of the crystal delta-endotoxin in alkaline reducing conditions and activation with trypsin and gut extracts from susceptible insects yielded a preparation whose toxicity could be assayed in vitro against a range of insect cell lines. After activation with Aedes aegypti gut extract the preparation was toxic to all of the mosquito cell lines but only one lepidopteran line (Spodoptera frugiperda), whereas an activated preparation produced by treatment with P. brassicae gut enzymes or trypsin was toxic only to lepidopteran cell lines. These in vitro results were paralleled by the results of in vivo bioassays. Gel electrophoretic analysis of the products of these different activation regimes suggested that a 130-kDa protoxin in the native crystal is converted to a 55-kDa lepidopteran-specific toxin by trypsin or P. brassicae enzymes and to a 52-kDa dipteran toxin by A. aegypti enzymes. Two-step activation of the 130-kDa protoxin by successive treatment with trypsin and A. aegypti enzymes further suggested that the 52-kDa dipteran toxin is derived from the 55-kDa lepidopteran toxin by enzymes specific to the mosquito gut. Confirmation of this suggestion was obtained by peptide mapping of these two polypeptides. The native crystal 130 kDa delta-endotoxin and the two insect-specific toxins all cross-reacted with antiserum to B. thuringiensis var. kurstaki P1 lepidopteran toxin . Preincubation of the two activated colmeri toxins with P1 antiserum neutralized their cytotoxicity to both lepidopteran and dipteran cell lines. Record Date Created: 19860618 Record Date Completed: 19860618

5/7/70 DIALOG(R)File 155:MEDLINE(R) (c) format only 2004 The Dialog Corp. All rts. reserv.
06813876 PMID: 3888979
Delineation of a toxin -encoding segment of a Bacillus thuringiensis crystal protein gene.
Schnepf H E; Whiteley H R
Journal of biological chemistry (UNITED STATES) May 25 1985, 260 (10) p6273-80, ISSN 0021-9258 Journal Code: 2985121R Contract/Grant No.: GM-20784; GM; NIGMS; GM-26100; GM; NIGMS; K6-GM-442; GM; NIGMS Document type: Journal Article Languages: ENGLISH Main Citation Owner: NLM
Record type: Completed
Crystals of Bacillus thuringiensis subsp. kurstaki HD-1-Dipel contain a Mr 134,000 protoxin which can be cleaved by proteolysis to a peptide of Mr approximately 70,000; this peptide is lethal to lepidopteran larvae. We have analyzed the peptides produced by recombinant Escherichia coli strains bearing deletions and fusions of the protoxin gene in order to delineate the portion of the gene which encodes the toxic peptide. The recombinant strains produced the toxic peptide as well as larger peptides whose size was related to the length of the deleted gene. The results indicate that the amino-terminal 55% of the protoxin protein is sufficient for toxicity. While two different gene fusions to the 10th codon allowed the synthesis of toxic polypeptides, fusions to the 50th codon did not. 3' end deletions up to the 645th codon allowed synthesis of the toxic peptide whereas a deletion to the 603rd codon yielded a non-toxic peptide. Some of the 5' and 3' end alterations to the gene caused changes in the proteolytic cleavage patterns of the polypeptides synthesized by E. coli, suggesting that the alterations led to conformational changes in the proteins. The presence of different 3' end segments affected the levels of synthesis of the altered crystal proteins. Record Date Created: 19850627 Record Date Completed: 19850627

5/7/71 DIALOG(R)File 155:MEDLINE(R) (c) format only 2004 The Dialog Corp. All rts. reserv.
06465876 PMID: 6321329
Specificity of cultured insect tissue cells for bioassay of entomocidal protein from Bacillus thuringiensis .
Johnson D E; Davidson L I
In vitro (UNITED STATES) Jan 1984, 20 (1) p66-70, ISSN 0073-5655 Journal Code: 0063733 Document type: Journal Article Languages: ENGLISH Main Citation Owner: NLM Record type: Completed
Cultured tissue cells from lepidopteran and dipteran sourczes displayed an order-specific response to entomocidal protein from crystals of Bacillus thuringiensis . Protein isolated from crystals of B. thuringiensis subsp. kurstaki was effective against cells of the spruce budworm (Choristoneura fumiferana) and the tobacco hornworm (Manduca sexta), but was inactive against both mosquito cell lines tested (Aedes aegypti and Anopheles gambiae). Conversely, protein from inclus bodies of B. thuringiensis subsp. israelensis was fully active only against the mosquito cell lines but displayed reduce (four- to seven-fold) toxicity for the lepidopteran cell lines. One exception to this pattern of specificity was observed wi a Plodia interpunctella cell line, which failed to respond to either crystal protein preparation. The moth toxin was stable at degrees C for months, whereas the mosquito toxin was susceptible to proteolytic degradation and was unstable for peri longer than 2 wk. Record Date Created: 19840419 Record Date Completed: 19840419

5/7/72 DIALOG(R)File 155:MEDLINE(R) (c) format only 2004 The Dialog Corp. All rts. reserv.
05398675 PMID: 7420053
Purification of the insecticidal toxin in crystals of Bacillus thuringiensis .
Lilley M; Ruffell R N; Somerville H J
Journal of general microbiology (ENGLAND) May 1980, 118 (Pt 1) p1-11 , ISSN 0022-1287 Journal Code: 0375371 Document type: Journal Article Languages: ENGLISH Main Citation Owner: NLM
Record type: Completed
Crystals were purified from four serotypes of the insect pathogen Bacillus thuringiensis . Crystals from these serotyp were similar in amino acid and N-terminal analyses, but differed in their toxicity to two species of Lepidoptera and in their immunological properties. Toxic polypeptides were obtained following trypsin digestion of solutions of the crystals. In two strains (serotypes 3 and 9) this fraction contained only one polypeptide. Similar results were obtained when dissolved crystals were digested with other proteolytic enzymes or with gut contents from Pieris brassicae. The trypsin-resistant polypeptide was further purified by gel and ion-exchange chromatograhy and had a molecular weight of about 70,000, estimated by gel chromatogrpahy and gel electrophoresis. No evidence was obtained for a toxin of lower molecular weight. This purified to accounted for most, if not all, of the toxic activity originally present in the crystal solution and was active by injection and ingestion. The purified toxic fraction from serotype 1 appeared to contain two polypeptides, one of which corresponde to that found with serotypes 3 and 9. There were no major differences in the composition of crystals from different serotype of B. thuringiensis and it is concluded that the trypsin-resistant polypeptide represents the active insecticidal toxin of the crystal. Record Date Created: 19801218 Record Date Completed: 19801218

8/6/1 15683588 PMID: 14668140
Ion channels formed in planar lipid bilayers by the dipteran-specific Cry4B Bacillus thuringiensis toxin and its alpha1-alpha5 fragment . Ja Feb 2004

8/6/2 15013860 PMID: 12555398
Cloning and expression of the binary toxin genes of Bacillus sphaericus C3-41 in a crystal minus B. thuringiensis subsp. israelensis] Feb 199

8/6/3 14510132 PMID: 10508095
Production of chymotrypsin-resistant Bacillus thuringiensis Cry2Aa1 delta-endotoxin by protein engineering. Oct 1999

8/6/4 14485285 PMID: 10481060
Amino acid substitution in alpha-helix 7 of Cry1Ac delta-endotoxin of Bacillus thuringiensis leads to enhanced toxicity to Helicoverpa armige Hubner. Sep 17 1999

8/6/5 14373264 PMID: 10366728
Bacillus thuringiensis insecticidal Cry1Aa toxin binds to a highly conserved region of aminopeptidase N in the host insect leading to its evolutionary success. Jun 15 1999

8/6/6 14060546 PMID: 9758818
The introduction into bacillus sphaericus of the Bacillus thuringiensis subsp. medellin Cyt1Ab1 gene results in higher susceptibility of resistan mosquito larva populations to B. sphaericus. Oct 1998

8/6/7 14040117 PMID: 9739466
Biochemical characterization of the third domain from Bacillus thuringiensis Cry1A toxins. Aug 1998

8/6/8 13648195 PMID: 9342226
Cloning and characterization of Manduca sexta and Plutella xylostella midgut aminopeptidase N enzymes related to Bacillus thuringiensis toxin -binding proteins. Sep 15 1997

8/6/9 13639101 PMID: 9332588
Cloning, expression and toxicity of a mosquitocidal toxin gene of Bacillus thuringiensis subsp. medellin. Mar-Apr 1997

8/6/10 13626264 PMID: 9315709
Isolated domain II and III from the Bacillus thuringiensis Cry1Ab delta-endotoxin binds to lepidopteran midgut membranes. Sep 8 1997

8/6/11 13351775 PMID: 9054340
Thermodynamic analysis of domain organization of Bacillus thuringiensis toxins] Termodinamicheskii analiz domennoi organizatsii toksinov Bacillus thuringiensis . Dec 1996

8/6/12 12893251 PMID: 8572715
A Bacillus thuringiensis insecticidal crystal protein with a high activity against members of the family Noctuidae. Jan 1996

8/6/13 12605248 PMID: 7722342
The insecticidal CryIB crystal protein of Bacillus thuringiensis ssp. thuringiensis has dual specificity to coleopteran and lepidopteran larvae. Mar 1995

8/6/14 12357447 PMID: 12729731
Expression in Pichia pastoris and purification of a membrane-acting immunotoxin based on a synthetic gene coding for the Bacillus thuringiensis Cyt2Aa1 toxin . May 2003

8/6/15 12168626 PMID: 12502392
Enterotoxigenicity and cytotoxicity of Bacillus thuringiensis strains and development of a process for Cry1Ac production. Jan 1 2003

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Heterologous expression of cry2 gene from a local strain of Bacillus thuringiensis isolated in Nigeria. Dec 2002

8/6/17 12036661 PMID: 12357073
Cloning and characterization of an insecticidal crystal protein gene from Bacillus thuringiensis subspecies kenyae. Apr 2002

8/6/18 11998402 PMID: 12213239
Cry1A toxins of Bacillus thuringiensis bind specifically to a region adjacent to the membrane-proximal extracellular domain of BT-R(1) in Manduca sexta: involvement of a cadherin in the entomopathogenicity of Bacillus thuringiensis . Sep 2002

8/6/19 11639598 PMID: 11815850
Physical mapping of the Bacillus thuringiensis subsp. kurstaki and alesti chromosomes. Feb 2002

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Processing of Cry1Ab delta-endotoxin from Bacillus thuringiensis by Manduca sexta and Spodoptera frugiperda midgut proteases: role in protoxin activation and toxin inactivation. Nov 1 2001

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Characterization of a Bacillus thuringiensis delta-endotoxin which is toxic to insects in three orders. Aug 2000

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Comparative insecticidal properties of two nucleopolyhedrovirus vectors encoding a similar toxin gene chimer. Aug 2000

8/6/23 10508468 PMID: 10606725
Bacillus thuringiensis Cry1Aa toxin -binding region of Bombyx mori aminopeptidase N. Dec 17 1999

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Genome stability of Bacillus thuringiensis subsp. israelensis isolates. Jan 2000

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Insect-resistant chrysanthemum calluses by introduction of a Bacillus thuringiensis crystal protein gene. May 1993

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Full expression of the cryIIIA toxin gene of Bacillus thuringiensis requires a distant upstream DNA sequence affecting transcription. May 1993

8/6/27 09680882 PMID: 8476286
Cloning of a novel cryIC-type gene from a strain of Bacillus thuringiensis subsp. galleriae. Apr 1993

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Genomic amplification and expression of delta-endotoxin fragment of Bacillus thuringiensis . Sep 16 1992

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Expansion of insecticidal host range of Bacillus thuringiensis by in vivo genetic recombination. Apr 1992

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Insecticidal properties of a crystal protein gene product isolated from Bacillus thuringiensis subsp. kenyae. Feb 1992

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Two structural domains as a general fold of the toxic fragment of the Bacillus thuringiensis delta-endotoxins. Feb 14 1991

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Molecular cloning of the 130-kilodalton mosquitocidal delta-endotoxin gene of Bacillus thuringiensis subsp. israelensis in Bacillus sphaericus. Jun 1990

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Heterologous expression of a mutated toxin gene from Bacillus thuringiensis subsp. tenebrionis. Jan 1 1990

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Gene dosage effect on the expression of the delta-endotoxin genes of Bacillus thuringiensis subsp. kurstaki in Bacillus subtilis and Bacillu megaterium. Jun 30 1989

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Involvement of Tn4430 in transfer of Bacillus anthracis plasmids mediated by Bacillus thuringiensis plasmid pXO12. Jan 1989

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The mosquito larvicidal activity of 130 kDa delta-endotoxin of Bacillus thuringiensis var. israelensis resides in the 72 kDa amino-terminal fragment . May 31 1988

8/6/37 07739001 PMID: 2833395
Common features of Bacillus thuringiensis toxins specific for Diptera and Lepidoptera. Apr 5 1988

8/6/38 07506411 PMID: 3038691
Cloning and heterologous expression of an insecticidal delta-endotoxin gene from Bacillus thuringiensis var. aizawai IC1 toxic to both lepidoptera and diptera. 1987

8/6/39 07402365 PMID: 3031426
Characterization of the genes encoding the haemolytic toxin and the mosquitocidal delta-endotoxin of Bacillus thuringiensis israelensis. D 1986

8/6/40 07331004 PMID: 3026371
Purification and characterization of the active fragment from Bacillus thuringiensis delta- toxin . Nov 26 1986

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Bacillus thuringiensis var. israelensis delta-endotoxin. Nucleotide sequence and characterization of the transcripts in Bacillus thuringiensis and Escherichia coli. Sep 5 1986

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Cloning and expression of the lepidopteran toxin produced by Bacillus thuringiensis var. thuringiensis in Escherichia coli. 1986

8/6/43 06615870 PMID: 6090216
Cloning and expression in Escherichia coli of the insecticidal delta-endotoxin gene of Bacillus thuringiensis var. israelensis. Oct 1 1984

8/7/41 DIALOG(R)File 155:MEDLINE(R)
07317812 PMID: 3025452
Bacillus thuringiensis var. israelensis delta-endotoxin. Nucleotide sequence and characterization of the transcripts in Bacillus thuringiensis and Escherichia coli.
Ward E S; Ellar D J
Journal of molecular biology (ENGLAND) Sep 5 1986, 191 (1) p1-11, ISSN 0022-2836 Journal Code: 2985088R
Document type: Journal Article Languages: ENGLISH Main Citation Owner: NLM Record type: Completed
The nucleotide sequence of a 1408 base-pair DNA fragment encoding the insecticidal 27,340 Mr delta-endotoxin of Bacillus thuringiensis var. israelensis has been determined by analysis of a recombinant plasmid from Escherichia coli. The hydropathy plot of the protein shows it to be highly hydrophobic, consistent with a postulated cytolytic mechanism of action for the toxin . In addition, the delta-endotoxin transcriptional start points that are used in B. thuringiensis and an E. coli recombinant have been determined. In B. thuringiensis var. israelensis, transcription initiates from a single start point, and gene-specific transcripts are not observed before stage II of sporulation. This is the stage at which delta-endotoxin antigen is first detected, indicating that control of expression is primarily at the transcriptional level for this protein. Analysis of gene-specific transcription in E. coli indicates that at least three start points are utilized in this organism. Interestingly, the highest level of delta-endotoxin mRNA is seen during mid-exponential growth of E. coli and the level appears to decrease a the cells enter the stationary phase of growth. Record Date Created: 19870123 Record Date Completed: 19870123

8/7/42 DIALOG(R)File 155:MEDLINE(R)
07158027 PMID: 3013729
Cloning and expression of the lepidopteran toxin produced by Bacillus thuringiensis var. thuringiensis in Escherichia col
Honigman A; Nedjar-Pazerini G; Yawetz A; Oron U; Schuster S; Broza M; Sneh B
Gene (NETHERLANDS) 1986, 42 (1) p69-77, ISSN 0378-1119 Journal Code: 7706761 Document type: Journal Article
Languages: ENGLISH Main Citation Owner: NLM Record type: Completed
The Bacillus thuringiensis var. thuringiensis strain 3A produces a proteinaceous parasporal crystal toxic to larvae of variety of lepidopteran pests including Spodoptera littoralis (Egyptian cotton leaf worm), Heliothis zeae, H. virescens and Boarmia selenaria. By cloning of individual plasmids of B. thuringiensis in Escherichia coli, we localized a gene coding for th delta-endotoxin on the B. thuringiensis plasmid of about 17 kb designated pTN4. Following partial digestion of the B.

thuringiensis plasmid pTN4 and cloning into the E. coli pACYC184 plasmid three clones were isolated in which toxin production was detected. One of these hybrid plasmids pTNG43 carried a 1.7-kb insert that hybridized to the 14-kb BamHI DNA fragments of B. thuringiensis var. thuringiensis strains 3A and berliner 1715. This BamHI DNA fragment of strain berliner 1715 has been shown to contain the gene that codes for the toxic protein of the crystal (Klier et al., 1982). No homologous sequences have been found between pTNG33 and the DNA of B. thuringiensis var. entomocidus strain 24, which exhibited insecticidal activity against S. littoralis similar to that of strain 3A. Record Date Created: 19860725 Record Date Completed: 19860725

8/7/43 DIALOG(R)File 155:MEDLINE(R) (c) format only 2004 The Dialog Corp. All rts. reserv.
06615870 PMID: 6090216
Cloning and expression in Escherichia coli of the insecticidal delta-endotoxin gene of Bacillus thuringiensis var. israelensis. Ward E S; Ellar D J; Todd J A
FEBS letters (NETHERLANDS) Oct 1 1984, 175 (2). p377-82, ISSN 0014-5793 Journal Code: 0155157
Document type: Journal Article Languages: ENGLISH Main Citation Owner: NLM Record type: Completed
Recombinant plasmids containing the mosquitocidal delta-endotoxin gene were constructed by inserting HindIII fragments of the Bacillus thuringiensis var. israelensis 72-75 Md plasmid in to the Escherichia coli vector pUC12. Two recombinants producing the 26 000 Da delta-endotoxin (pIP173 and pIP174) were identified by screening clones in an E. coli in vitro transcription-translation system. Both recombinants were 12.4 kb chimaeric plasmids comprising pUC12 and a common 9.7 kb HindIII fragment of the B. thuringiensis plasmid. The 26 000 Da polypeptide synthesis in vivo from pIP174 transformed into E. coli JM101 was lethal to mosquito larvae and cytotoxic to mosquito cells in vitro. The biological authenticity of the cloned product was further confirmed by demonstrating that the cytotoxicity of the polypeptide was neutralised by antiserum to the authentic delta-endotoxin or by preincubation with excess toxin receptor. Transcription of the recombinant delta-endotoxin gene in E. coli appears to utilise a Bacillus promoter sequence(s) rather than the pUC12 beta-galactosidase promotor. Record Date Created: 19841119 Record Date Completed: 19841119

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File 5:Biosis Previews(R) 1969-2004/Mar W1 (c) 2004 BIOSIS

Set	Items	Description
S1	8862	THURINGIENSIS
S2	141509	TOXIN
S3	1859	S1 AND S2
S4	67863	PROTEOL?
S5	94	S3 AND S4
S6	113606	FRAGMENT
S7	84	S3 AND S6
S8	73	S7 NOT S5

5/6/1
0014628028 BIOSIS NO.: 200300578705
Role of proteolysis in determining potency of Bacillus thuringiensis
Cry1Ac delta-endotoxin.
2000

5/6/2 0014531207 BIOSIS NO.: 200300488864
The mode of action of the Bacillus thuringiensis vegetative insecticidal protein Vip3A differs from that of Cry1Ab delta-endotoxin. 2003

5/6/3 0014524885 BIOSIS NO.: 200300478840
Mutation of the hydrophobic residue on helix alpha5 of the Bacillus thuringiensis Cry4B affects structural stability. 2003

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Activity of free and clay-bound insecticidal proteins from Bacillus thuringiensis subsp. israelensis against the mosquito Culex pipiens. 2003

5/6/5 0014194705 BIOSIS NO.: 200300153424
Characterization and comparison of midgut proteases of Bacillus thuringiensis susceptible and resistant diamondback moth (Plutellidae: Lepidoptera). 2003

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Mode of action of Cry toxins from Bacillus thuringiensis .] ORIGINAL LANGUAGE TITLE: Mecanismo de accion de las toxinas Cry de Bacillus thuringiensis . 2002

5/6/7 0013895372 BIOSIS NO.: 200200488883
Production of delta-endotoxin by Bacillus thuringiensis subsp kurstaki and overcoming of catabolite repression by using highly concentrated gruel and fish meal media in 2- and 20-dm3 fermenters 2002

5/6/8 0013834530 BIOSIS NO.: 200200428041
N-terminal activation is an essential early step in the mechanism of action of the Bacillus thuringiensis Cry1Ac insecticidal toxin 2002

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Characterization of the proteolytic enzymes in the midgut of the European Cockchafer, Melolontha melolontha (Coleoptera: Scarabaeidae) 20

5/6/10 0013798038 BIOSIS NO.: 200200391549
Interaction of 65- and 62-kD proteins from the apical membranes of the Aedes aegypti larvae midgut epithelium with Cry4B and Cry11A ndoto of Bacillus thuringiensis 2002

5/6/11 0013721379 BIOSIS NO.: 200200314890
Changes in protease activity and Cry3Aa toxin binding in the Colorado potato beetle: Implications for insect resistance to Bacillus thuringiensi toxins 2002

5/6/12 0013657352 BIOSIS NO.: 200200250863
Cadherin-like receptor binding facilitates proteolytic cleavage of helix alpha-1 in domain I and oligomer pre-pore formation of Bacillus thuringiensis Cry1Ab toxin 2002

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Colorado potato beetle resistance to the Cry3A toxin of Bacillus thuringiensis subsp. Tenebrionis 2001

5/6/14 0013540198 BIOSIS NO.: 200200133709
Bacillus thuringiensis : An insecticide.] ORIGINAL LANGUAGE TITLE: Bacillus thuringiensis : W zwalczaniu owadow 2001

5/6/15 0013395843 BIOSIS NO.: 200100567682
Transcriptional activator PlcR regulate the expression of multiple genes in Bacillus cereus 2001

5/6/16 0013314287 BIOSIS NO.: 200100486126
Role of interdomain salt bridges in the pore-forming ability of the Bacillus thuringiensis toxins Cry1Aa and Cry1Ac 2001

5/6/17 0013074836 BIOSIS NO.: 200100246675
Specific cleavage of the Cry1Ab toxin receptor BT-R1 in the midgut epithelium of Manduca Sexta 2001

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Redesign of an interhelical loop of the Bacillus thuringiensis Cry4B delta-endotoxin for proteolytic cleavage 2001

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Membrane pore architecture of a cytolytic toxin from Bacillus thuringiensis 2000

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Proteolytic processing of the Cyt1Ab1 toxin produced by Bacillus thuringiensis subsp. Medellin 2000

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Activation pattern and toxicity of the Cry11Bb1 toxin of Bacillus thuringiensis subsp. Medellin 2000

5/6/22 0012636933 BIOSIS NO.: 200000355246
The interactions between soybean trypsin inhibitor and delta-endotoxin of Bacillus thuringiensis in Helicoverpa armigera larva 2000

5/6/23 0012586368 BIOSIS NO.: 200000304681
Methanol-induced conformational changes in delta-endotoxin from Bacillus thuringiensis var. tenebrionis 2000

5/6/24 0012403218 BIOSIS NO.: 200000121531
Identification and purification of the 69-kDa intracellular protease involved in the proteolytic processing of the crystal delta-endotoxin of Bacil thuringiensis subsp. Tenebrionis 2000

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Activation and fragmentation of Bacillus thuringiensis delta-endotoxin by high concentrations of proteolytic enzymes 1999

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Resistance to Bacillus thuringiensis Cry1Ac toxin in three strains of Heliothis virescens: Proteolytic and SEM study of the larval midgut 1999

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Intragastric and intraperitoneal administration of Cry1Ac protoxin from Bacillus thuringiensis induces systemic and mucosal antibody response in mice 1999

5/6/28 0011911540 BIOSIS NO.: 199900171200
Biochemical characterization of Bacillus thuringiensis cytolytic toxins in association with a phospholipid bilayer 1999

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Processing of delta-endotoxin of Bacillus thuringiensis subsp. kurstaki HD-1 in Heliothis armigera midgut juice and the effects of protease inhibitors 1998

5/6/30 0011522896 BIOSIS NO.: 199800317143
Proteolysis of Bacillus thuringiensis subspecies kurstaki endotoxin with midgut proteases of some important lepidopterous species 1998

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Involvement of an endogenous metalloprotease in the activation of protoxin in Bacillus thuringiensis subsp. Kurstaki 1997

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Role of DNA in the activation of the Cry1A insecticidal crystal protein from Bacillus thuringiensis 1998

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Unusual proteolytic processing of a delta-endotoxin from Bacillus thuringiensis strain buibui by larval midgut-juice of Anomala cuprea Hope (Coleoptera: Scarabaeidae) 1997

5/6/34 0011325296 BIOSIS NO.: 199800119543
Endogenous protease-activated 66-kDa toxin from Bacillus thuringiensis subsp. kurstaki active against Spodoptera littoralis 1998

5/6/35 0011218831 BIOSIS NO.: 199800013078
Interaction of the delta-endotoxin CytA from Bacillus thuringiensis var. israelensis with lipid membranes 1997

5/6/360011128842 BIOSIS NO.: 199799762902
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Correction of PREVIEWS 99342806. Mapping of the entomocidal fragment of Spodoptera-specific Bacillus thuringiensis toxin CryIC. Correction of author name from Z. Konez-Kalman. Erratum published in Molecular and General Genetics Vol. 253. Iss. 6. 1997. p. 777 1996

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Channel activity caused by a Bacillus thuringiensis delta-endotoxin preparation depends on the method of activation 1997

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Mapping of the entomocidal fragment of Spodoptera-specific Bacillus thuringiensis toxin CryIC 1996

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A specific binding protein from Manduca sexta for the insecticidal toxin of Bacillus thuringiensis ssp. Berliner 1993

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5/6/67 0008372318 BIOSIS NO.: 199294074159
PROTEOLYTIC PROCESSING OF DELTA ENDOTOXIN OF BACILLUS- THURINGIENSIS -VAR-KURSTAKI HD-1 IN INSENSITIVE INSECT SPODOPTERA-LITURA UNUSUAL PROTEOLYSIS IN THE PRESENCE OF SODIUM DODECYL SULFATE 1992

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MODE OF ACTION OF BACILLUS- THURINGIENSIS TOXIN CRYIIIA AN ANALYSIS OF TOXICITY IN LEPTINOTARSA-DECEMLINEATA SAY AND DIABROTICA-UNDECIMPUNCTATA-HOWARDI BARBER 1992

5/6/70 0008174813 BIOSIS NO.: 199293017704
CYTOTOXICITY OF A CLONED BACILLUS- THURINGIENSIS -SSP-ISRAELENSIS CRYIVB TOXIN TO AN AEDES-AEGYPTI CELL LINE 19

5/6/71 0007885743 BIOSIS NO.: 199192131514

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PROTEOLYTIC PROCESSING OF A COLEOPTERAN-SPECIFIC DELTA ENDOTOXIN PRODUCED BY BACILLUS- THURINGIENSIS -VAR-TENEBRIONIS 1989

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PURIFICATION AND PROPERTIES OF A 28-KILODALTON HEMOLYTIC AND MOSQUITOCIDAL PROTEIN TOXIN OF BACILLUS-THURINGIENSIS -SSP-DARMSTADIENSIS 73-E10-2 1989

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DIFFERENTIAL SPECIFICITY OF TWO INSECTICIDAL TOXINS FROM BACILLUS- THURINGIENSIS -VAR-AIZAWAI 1988

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ANALYSIS OF THE MOLECULAR BASIS OF INSECTICIDAL SPECIFICITY OF BACILLUS- THURINGIENSIS CRYSTAL DELTA ENDOTOXIN 1987

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PURIFICATION OF THE MOSQUITOCIDAL AND CYTOLYTIC PROTEINS OF BACILLUS- THURINGIENSIS -SSP-ISRAELENSIS 1987

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HOST SPECIFICITY OF THE BACILLUS- THURINGIENSIS DELTA ENDOTOXIN TOWARD LEPIDOPTERAN SPECIES SPODOPTERA-LITTORALIS BDV. AND PIERIS-BRASSICAE L 1987

5/6/86 0005215711 BIOSIS NO.: 198682062098
SPECIFICITY OF BACILLUS- THURINGIENSIS -VAR-COLMERI INSECTICIDAL DELTA ENDOTOXIN IS DETERMINED BY DIFFERENTIAL PROTEOLYTIC PROCESSING OF THE PROTOXIN BY LARVAL GUT PROTEASES 1986

5/6/87 0005038756 BIOSIS NO.: 198681002647
PROTEASE ACTIVATION OF THE ENTOMOCIDAL PROTOXIN OF BACILLUS- THURINGIENSIS -SSP-KURSTAKI 1985

5/6/88 0004740233 BIOSIS NO.: 198580049128
DELINEATION OF A TOXIN -ENCODING SEGMENT OF A BACILLUS- THURINGIENSIS CRYSTAL PROTEIN GENE 1985

5/6/89 0004513711 BIOSIS NO.: 198529042610
BIOSYNTHESIS OF THE INSECTICIDAL TOXIN FROM BACILLUS- THURINGIENSIS -SSP-ISRAELENSIS 1985

5/6/90 0004170099 BIOSIS NO.: 198477002010
DISSOLUTION AND DEGRADATION OF BACILLUS- THURINGIENSIS DELTA ENDO TOXIN BY GUT JUICE PROTEASE OF THE SILKWORM BOMBYX-MORI 1983

5/6/91 0003883478 BIOSIS NO.: 198375067421
THE MAIN FEATURES OF BACILLUS- THURINGIENSIS DELTA ENDO TOXIN MOLECULAR STRUCTURE 1982

5/6/92 0003025269 BIOSIS NO.: 198070056756
PURIFICATION OF THE INSECTICIDAL TOXIN IN CRYSTALS OF BACILLUS- THURINGIENSIS 1980

5/6/93 0002286900 BIOSIS NO.: 197815004387
SOLUBLE GLYCO PROTEIN INSECT TOXIN FROM THE SPORE COAT OF BACILLUS- THURINGIENSIS 1978

5/6/94 0002100375 BIOSIS NO.: 197763021231
FURTHER OBSERVATIONS ON THE MODE OF ACTION OF BACILLUS- THURINGIENSIS ON PAPILIO-DEMOLEUS AND SPODOPTERA-LITURA 1976

5/7/86 DIALOG(R)File 5:Biosis Previews(R) (c) 2004 BIOSIS. All rts. reserv.
0005215711 BIOSIS NO.: 198682062098
SPECIFICITY OF BACILLUS- THURINGIENSIS -VAR-COLMERI INSECTICIDAL DELTA ENDOTOXIN IS DETERMINED BY DIFFERENTIAL PROTEOLYTIC PROCESSING OF THE PROTOXIN BY LARVAL GUT PROTEASES
AUTHOR: HAIDER M Z (Reprint); KNOWLES B H; ELLAR D J
AUTHOR ADDRESS: DEPARTMENT BIOCHEMISTRY, UNIVERSITY CAMBRIDGE, TENNIS COURT ROAD, CAMBRIDGE ENGLAND, CB2 1QW, UK**UK
JOURNAL: European Journal of Biochemistry 156 (3): p531-540 1986 ISSN: 0014-2956 DOCUMENT TYPE: Article
RECORD TYPE: Abstract LANGUAGE: ENGLISH
ABSTRACT: The native crystal .delta.-endotoxin produced by Bacillus thuringiensis var. colmeri, serotype 21, is toxic to both lepidoteran (Pieris brassicae) and dipteran (Aedes aegypti) larvae. Solubilization of the crystal .delta.-endotoxin in alkaline reducing conditions and activation with trypsin and gut extracts from susceptible insects yielded a preparation whose toxicity could be assayed in vitro against a range of insect cell lines. After activation with Aedes aegypti gut extract the preparation w toxic to all of the mosquito cell lines but only one lepidopteran line (Spodoptera frugiperda), whereas an activated preparation produced by treatment with P. brassicae gut enzymes or trypsin was toxic only to lepidopteran cell lines. These in vitro results were paralleled by the results of in vivo bioassays. Gel electrophoretic analysis of the products of these different activation regimes suggested that a 130-kDa protoxin in the native crystal is converted to a 55-KDa lepidopteran-specific toxin by tryp or P. brassicae enzymes and to a 52-kDa dipteran toxin by A. aegypti enzymes. Two-step activation of the 130-kDa protoxin by successive treatment with trypsin and A. aegypti enzymes further suggested that the 52-kDa dipteran toxin is derived fro the 55-kDa lepidopteran toxin by enzymes specific to te mosquito gut. Confirmation of this suggestion was obtained by pepti mapping of these two polypeptides. The native crystal 130 kDa .delta.-endotoxin and the two insect-specific toxins all cross-reacted with antiserum to B. thuringiensis var. kurstaki P1 lepidopteran toxin . Preincubation of the two activated colmeri tox with P1 antiserum neutralized their cytotoxicity to both lepidopteran and dipteran cell lines.

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0005038756 BIOSIS NO.: 198681002647
PROTEASE ACTIVATION OF THE ENTOMOCIDAL PROTOXIN OF BACILLUS- THURINGIENSIS -SSP-KURSTAKI
AUTHOR: ANDREWS R E JR (Reprint); BIBILOS M M; BULLA L A JR
AUTHOR ADDRESS: DEP MICROBIOL, IOWA STATE UNIV, AMES, IOWA 50011, USA**USA
JOURNAL: Applied and Environmental Microbiology 50 (4): p737-742 1985 ISSN: 0099-2240 DOCUMENT TYPE: Article
RECORD TYPE: Abstract LANGUAGE: ENGLISH
ABSTRACT: Two isolates of Bacillus thuringiensis subsp. kurstaki were examined which produced different levels of intracellular proteases. Although the crystals from both strains had comparable toxicity, one of the strains, LB1, had a strong polypeptide band at 68,000 molecular weight in the protein from the crystals; in the other, HD251, no such band was evident When the intracellular proteases in both strains were measured, strain HD251 produced less than 10% of the proteolytic activity found in LB1. These proteases were primarily neutral metalloproteases, although low levels of other proteases were detected. In LB1, the synthesis of protease increased as the cells began to sporulate; however, in HD251, protease activity appeared much later in the sporulation cycle. The protease activity in strain LB1 was very high when the cells were making crystal toxin , whereas in HD251 reduced proteolytic activity was present during crystal toxin synthesis. The insecticidal to (molecular weight, 68,000) from both strains could be prepared by cleaving the protoxin (molecular weight, 135,000) with trypsin, followed by ion-exchange chromatography. The procedure described gave quantitative recovery of toxic activity, and approximately half of the total protein was recovered. Calculations show that these results correspond to stoichiometric conversion of proteoxin to insecticidal toxin . The toxicities of whole crystals, soluble crystal protein, and purified toxin from both strains were comparable.

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0004740233 BIOSIS NO.: 198580049128
DELINEATION OF A TOXIN -ENCODING SEGMENT OF A BACILLUS- THURINGIENSIS CRYSTAL PROTEIN GENE

AUTHOR: SCHNEPF H E (Reprint); WHITELEY H R
AUTHOR ADDRESS: DEP MICROBIOLOGY AND IMMUNOLOGY, SC-42, SCH MED, UNIV WASHINGTON, SEATTLE, WA 98195, USA**USA
JOURNAL: Journal of Biological Chemistry 260 (10): p6273-6280 1985 ISSN: 0021-9258 DOCUMENT TYPE: Article
RECORD TYPE: Abstract LANGUAGE: ENGLISH
ABSTRACT: Crystals of B. thuringiensis ssp. kurstaki HD-1-Dipel contain a MW 134,000 protoxin which can be cleaved by proteolysis to a peptide of MW .apprx. 70,000; this peptide is lethal to lepidopteran larvae. One analyzed the peptides produced by recombinant Escherichia coli strains bearing deletions and fusions of the protoxin gene in order to delineate the portion of the gene which encodes the toxic peptide. The recombinant strains produced the toxic peptide and larger peptides whose size was related to the length of the deleted gene. The amino-terminal 55% of the protoxin protein is sufficient for toxicity. While 2 different gene fusions to the 10th codon allowed the synthesis of toxic polypeptides, fusions to the 50th codon did not. 3' end deletions up to the 645th codon allowed synthesis of the toxic peptide, whereas a deletion to the 603rd codon yielded a non-toxic peptide. Some of the 5' and 3' end alterations to the gene caused changes in the proteolytic cleavage patterns of the polypeptides synthesized by E. coli, suggesting that the alterations led to conformational changes in the proteins. The presence of different 3' end segments affected the levels of synthesis of the altered crystal proteins.

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0004513711 BIOSIS NO.: 198529042610
BIOSYNTHESIS OF THE INSECTICIDAL TOXIN FROM BACILLUS- THURINGIENSIS -SSP-ISRAELENSIS
AUTHOR: ANDREWS R E JR (Reprint); BULLA L A JR
AUTHOR ADDRESS: DEPARTMENT MICROBIOLOGY, IOWA STATE UNIVERSITY, AMES, IOWA, USA**USA
JOURNAL: Abstracts of the Annual Meeting of the American Society for Microbiology 85 p183 1985
CONFERENCE/MEETING: 85TH ANNUAL MEETING OF THE AMERICAN SOCIETY FOR MICROBIOLOGY, LAS VEGAS, NEV., USA, MAR. 3-7, 1985. ABSTR ANNU MEET AM SOC MICROBIOL. ISSN: 0094-8519 DOCUMENT TYPE: Meeting
RECORD TYPE: Citation LANGUAGE: ENGLISH

5/7/90 DIALOG(R)File 5:Biosis Previews(R) (c) 2004 BIOSIS. All rts. reserv.
0004170099 BIOSIS NO.: 198477002010
DISSOLUTION AND DEGRADATION OF BACILLUS- THURINGIENSIS DELTA ENDO TOXIN BY GUT JUICE PROTEASE OF THE SILKWORM BOMBYX-MORI
AUTHOR: TOJO A (Reprint); AIZAWA K
AUTHOR ADDRESS: INST OF BIOL CONTROL, FAC OF AGRIC, KYUSHU UNIV, FUKUOKA 812, JPN**JAPAN
JOURNAL: Applied and Environmental Microbiology 45 (2): p576-580 1983 ISSN: 0099-2240 DOCUMENT TYPE: Article
RECORD TYPE: Abstract LANGUAGE: ENGLISH
ABSTRACT: The dissolution and degradation of .delta.-endotoxin (crystal) of B. thuringiensis subsp. kurstaki strain HD-1 were investigated. Crystals were dissolved in 0.1 m. pyhosphate-carbonate-NaOH buffer at pH > 12. Swelling of crystals occurred in the buffer between pH 10 and 11, and crystals dissolved in the same buffer supplemented with gut juice protease of the silkworm B. mori. The proteolytic dissolution of crystals occurred after a time lag of several minutes in 0.1 M carbonate-NaOH buffer, pH 10.2. The time lag was not observed when crystals were suspended in the buffer for 30 min. before the addition of protease. After the dissolution of the crystals and further degradation of the solubilized protein, the appearance of a toxic protein with a MW of 59,000, designated P-59, was observed. Lower MW peptides (less than 40,000) showed no toxicity to the silkworm larvae on feeding. Digestion of the 120,000-dalton subunit of the crystal by gut juice protease also produced P-59. These observations suggest the occurrence of a similar process in vivo, i.e., the swelling of crystals due to the alkalinity of gut juice and the production of P-59, dependent on the hydrolysis of swollen crystals by gut juice protease.

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0003883478 BIOSIS NO.: 198375067421
THE MAIN FEATURES OF BACILLUS- THURINGIENSIS DELTA ENDO TOXIN MOLECULAR STRUCTURE
AUTHOR: CHESTUKHINA G G (Reprint); KOSTINA L I; MIKHAILOVA A L; TYURIN S A; KLEPIKOVA F S; STEPANOV V M
AUTHOR ADDRESS: ISNT GENETICS AND SELECTION INDUSTRIAL MICROORGANISMS, 113545 MOSCOW, USSR**USSR
JOURNAL: Archives of Microbiology 132 (2): p159-162 1982 ISSN: 0302-8933 DOCUMENT TYPE: Article
RECORD TYPE: Abstract LANGUAGE: ENGLISH
ABSTRACT: The crystal-forming proteins (.delta.-endotoxins) produced by various serotypes of B. thuringiensis and toxic for Lepidoptera reveal the same pattern of molecular organization. These proteins 130,000-145,000 MW) contain an N-terminal domain (65,000-85,000 MW) resistant to proteolysis whereas their C-terminal moieties (65,00 MW) undergo an extensive degradation by trypsin that leads to stepwise cleavage off the fragments with MW of 15,000-35,000. The N-terminal domain from serotype V .delta.-endotoxin is active when introduced into the hemocoel of Galleria mellonella larvae. It corresponds to the true toxin normally formed by action of larva proteases on the crystal-forming protein (protoxin). Some differences were found in the properties of the N-terminal domains isolated from the crystal-forming proteins of III, V and IX serotypes, e.g., in their solubility, digestion by subtilisin, MW and the distribution of methionine residues along the polypeptide chains.

5/7/92 DIALOG(R)File 5:Biosis Previews(R) (c) 2004 BIOSIS. All rts. reserv.
0003025269 BIOSIS NO.: 198070056756
PURIFICATION OF THE INSECTICIDAL TOXIN IN CRYSTALS OF BACILLUS- THURINGIENSIS
AUTHOR: LILLEY M (Reprint); RUFFELL R N; SOMMERVILLE H J
AUTHOR ADDRESS: SHELL RES LTD, SHELL BIOSCI LAB, SITTINGBOURNE RES CENT, SITTINGBOURNE ME9 8AG, KENT, ENGL, UK**UK
JOURNAL: Journal of General Microbiology 118 (1): p1-12 1980 ISSN: 0022-1287 DOCUMENT TYPE: Article
RECORD TYPE: Abstract LANGUAGE: ENGLISH
ABSTRACT: Crystals were purified from 4 serotypes of the insect pathogen B. thuringiensis . Crystals from these serotypes were similar in amino acid and N-terminal analyses, but differed in their toxicity to 2 spp. of Lepidoptera and in their immunological properties. Toxic polypeptides were obtained following trypsin digestion of solutions of the crystals. In 2 strain (serotypes 3 and 9), this fraction contained only 1 polypeptide. Similar results were obtained when dissolved crystals were digested with other proteolytic enzymes or with gut contents from Pieris brassicae. The trypsin-resistant polypeptide was further purified by gel and ion-exchange chromatography and had a MW of about 70,000, estimated by gel chromatography a gel electrophoresis. No evidence was obtained for a toxin of lower MW. This purified toxin accounted for most, if not all, of the toxic activity originally present in the crystal solution and was active by injection and ingestion. The purified toxic fraction from serotype 1 appeared to contain 2 polypeptides, one of which corresponded to that found with serotypes 3 and 9. There were no major differences in the composition of crystals from different serotypes of B. thuringiensis and it is concluded that trypsin-resistant polypeptide represents the active insecticidal toxin of the crystal.

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0002286900 BIOSIS NO.: 197815004387
SOLUBLE GLYCO PROTEIN INSECT TOXIN FROM THE SPORE COAT OF BACILLUS- THURINGIENSIS
AUTHOR: ARONSON J N; FOX S I
JOURNAL: Federation Proceedings 37 (6): p1824 1978 ISSN: 0014-9446 DOCUMENT TYPE: Article
RECORD TYPE: Citation LANGUAGE: Unspecified

5/7/94 DIALOG(R)File 5:Biosis Previews(R) (c) 2004 BIOSIS. All rts. reserv.
0002100375 BIOSIS NO.: 197763021231
FURTHER OBSERVATIONS ON THE MODE OF ACTION OF BACILLUS- THURINGIENSIS ON PAPILIO-DEMOLEUS AND SPODOPTERA-LITURA
AUTHOR: NARAYANAN K; JAYARAJ S; GOVINDARAJAN R
JOURNAL: Journal of Invertebrate Pathology 28 (2): p269-270 1976 ISSN: 0022-2011 DOCUMENT TYPE: Article
RECORD TYPE: Abstract LANGUAGE: Unspecified
ABSTRACT: The influence of reducing substances (oxalic acid, ascorbic acid) and proteolytic enzyme activity of the guts of instar larvae of these insects was investigated to understand better the mode of action of B. thuringiensis . The average time required to effect 100% mortality was 1/2 to 1 day in P. demoleus as against no mortality in S. litura. The highly susceptible P demoleus contained the highest amount of 325 .mu.g/g ascorbic acid as against 194 .mu.g/g in S. litura. S. litura contained 481.0 .mu.g/g of total phenol and 379 .mu.g/g of OD [orthodihydroxy] phenol and was resistant to B. thuringiensis infection. Larvae of P. demoleus, highly susceptible to the pathogen, showed noticeably lower amounts of total phenol (215 .mu.g/g) an OD phenol (111 .mu.g/g). P. demoleus showed a higher amount of proteolytic enzyme activity (0.425 units) than S. litura (0. units). The gut pH of P. demoleus was 9.7-10.0 and that of S. litura 8.2-8.5. The solubility of the toxic crystal in vivo as a resu of the high gut pH in P. demoleus probably accounted for the high susceptibility of this species. The presence of large amoun of reducing substances like ascorbic acid and phenols favored the S-S bond cleavage. When the S-S bond was broken, the protein moiety of the toxin was acted upon by the proteases. A low pH and low ascorbic acid and phenol contents along with comparatively less proteolytic activity of the gut were the possible factors governing non-susceptibility of S. litura to B. thuringiensis .

8/6/1 0014760987 BIOSIS NO.: 200400141744
Ion channels formed in planar lipid bilayers by the dipteran-specific Cry4B Bacillus thuringiensis toxin and its alpha1-alpha5 fragment . 2004

8/6/2 0014711532 BIOSIS NO.: 200400077788
Pectinophora gossypiella (pink bollworm) Bacillus thuringiensis toxin receptor BT-R2 2003

8/6/3 0014526905 BIOSIS NO.: 200300480860
Expression of a Bacillus thuringiensis cry1C gene in plastid confers high insecticidal efficacy against tobacco cutworm: A Spodoptera insect. 2

8/6/4 0014359854 BIOSIS NO.: 200300318573
Expression in Pichia pastoris and purification of a membrane-acting immunotoxin based on a synthetic gene coding for the Bacillus thuringiens Cyt2Aa1 toxin . 2003

8/6/5 0014167188 BIOSIS NO.: 200300124298
Cloning and characterization of a cytolytic and mosquito larvicidal delta-endotoxin from Bacillus thuringiensis subsp. darmstadiensis. 2003

8/6/6 0014128117 BIOSIS NO.: 200300086836
Enterotoxigenicity and cytotoxicity of Bacillus thuringiensis strains and development of a process for Cry1Ac production. 2003

8/6/7 0014103272 BIOSIS NO.: 200300061991
Heterologous expression of cry2 gene from a local strain of Bacillus thuringiensis isolated in Nigeria. 2002

8/6/8 0013979121 BIOSIS NO.: 200200572632
Cry1A toxins of Bacillus thuringiensis bind specifically to a region adjacent to the membrane-proximal extracellular domain of BT-R1 in Manduca sexta: involvement of a cadherin in the entomopathogenicity of Bacillus thuringiensis 2002

8/6/9 0013964780 BIOSIS NO.: 200200558291
Cloning and characterization of an insecticidal crystal protein gene from Bacillus thuringiensis subspecies kenyae 2002

8/6/10 0013608119 BIOSIS NO.: 200200201630
Cry1Ag1: A novel entomocidal protein from Bacillus thuringiensis subsp. aegypti strain C18 2001

8/6/11 0013566658 BIOSIS NO.: 200200160169
Physical mapping of the Bacillus thuringiensis subsp. kurstaki and alesti chromosomes 2002

8/6/12 0013512658 BIOSIS NO.: 200200106169
Hybrid toxin 1998

8/6/13 0013403533 BIOSIS NO.: 200100575372
Processing of Cry1Ab delta-endotoxin from Bacillus thuringiensis by Manduca sexta and Spodoptera frugiperda midgut proteases: Role in protoxin activation and toxin inactivation 2001

8/6/14 0013301008 BIOSIS NO.: 200100472847
Expression and biochemical characterization of the Bacillus thuringiensis Cry4B alpha1-alpha5 pore-forming fragment 2001

8/6/15 0013252652 BIOSIS NO.: 200100424491
Hybrid toxin 2001

8/6/16 0013213177 BIOSIS NO.: 200100385016
Use of endophytic diazotrophic bacteria as a vector to express the cry3A gene from Bacillus thuringiensis 2000

8/6/17 0013101218 BIOSIS NO.: 200100273057
Comparative insecticidal properties of two nucleopolyhedrovirus vectors encoding a similar toxin gene chimer 2000

8/6/18 0013074835 BIOSIS NO.: 200100246674
A cadherin-related protein receptor, BT-R1, in the midgut epithelium of Manduca sexta mediates toxicity for Bacillus thuringiensis Cry1A toxins 2001

8/6/19 0012981711 BIOSIS NO.: 200100153550
The fate of forage plant DNA in farm animals: A collaborative case-study investigating cattle and chicken fed recombinant plant material 2001

8/6/20 0012950213 BIOSIS NO.: 200100122052
The mode of action of a dipteran-specific bioinsecticide, Cry4A produced by Bacillus thuringiensis 2000

8/6/21 0012742802 BIOSIS NO.: 200000461115
Characterization of a Bacillus thuringiensis delta-endotoxin which is toxic to insects in three orders 2000

8/6/22 0012571315 BIOSIS NO.: 200000289628
Expression of the mosquitocidal cryIVB gene under the control of different promoters in Bacillus sphaericus 2362 and acrystalliferous Bacillus thuringiensis subsp. israelensis c4Q2-72 2000

8/6/23 0012385096 BIOSIS NO.: 200000103409
Bacillus thuringiensis Cry1Aa toxin -binding region of Bombyx mori aminopeptidase N 1999

8/6/24 0012331430 BIOSIS NO.: 200000049743
Genome stability of Bacillus thuringiensis subsp. israelensis isolates 2000

8/6/25 0012308778 BIOSIS NO.: 200000027091
Green-tissue-specific expression of a reconstructed cry1C gene encoding the active fragment of Bacillus thuringiensis delta-endotoxin in haploid tobacco plants conferring resistance to Spodoptera litura 1999

8/6/26 0012232427 BIOSIS NO.: 199900492087
Production of chymotrypsin-resistant Bacillus thuringiensis Cry2Aa1 delta-endotoxin by protein engineering 1999

8/6/27 0012205057 BIOSIS NO.: 199900464717
Amino acid substitution in alpha-helix 7 of Cry1Ac delta-endotoxin of Bacillus thuringiensis leads to enhanced toxicity to Helicoverpa armigera Hubner 1999

8/6/28 0012113540 BIOSIS NO.: 199900373200
Bacillus thuringiensis insecticidal Cry1Aa toxin binds to a highly conserved region of aminopeptidase N in the host insect leading to its evolutionary success 1999

8/6/29 0012064908 BIOSIS NO.: 199900324568
Cloning and expression of the binary toxin genes of Bacillus sphaericus C3-41 in a crystal minus B. thuringiensis subsp. Israelensis 1999

8/6/30 0011998470 BIOSIS NO.: 199900258130
Role of Bacillus thuringiensis toxin domains in toxicity and receptor binding in the diamondback moth 1999

8/6/31 0011699844 BIOSIS NO.: 199800494091
The introduction into Bacillus sphaericus of the Bacillus thuringiensis subsp. medellin cyt1Ab1 gene results in higher susceptibility of resistant mosquito larva populations to B. sphaericus 1998

8/6/32 0011659286 BIOSIS NO.: 199800453533
Biochemical characterization of the third domain from Bacillus thuringiensis CRY1A toxins 1998

8/6/33 0011601822 BIOSIS NO.: 199800396069
Cloning and expression of the cry1Ea4 gene of Bacillus thuringiensis and the comparative toxicity of its gene product 1998

8/6/34 0011164821 BIOSIS NO.: 199799798881
Cloning and characterization of Manduca sexta and Plutella xylostella midgut aminopeptidase N enzymes related to Bacillus thuringiensis tox binding proteins 1997

8/6/35 0011120248 BIOSIS NO.: 199799754308
Isolated domain II and III from the Bacillus thuringiensis Cry1 Ab delta-endotoxin binds to lepidopteran midgut membranes 1997

8/6/36 0011102116 BIOSIS NO.: 199799736176
The cryptic gene from Bacillus thuringiensis provides protection against Spodoptera littoralis in young transgenic plants 1997

8/6/37 0010889186 BIOSIS NO.: 199799523246
Thermodynamic analysis of the domain organization of Bacillus thuringiensis toxins 1996

8/6/38 0010882169 BIOSIS NO.: 199799516229
Cloning, expression and toxicity of a mosquitocidal toxin gene of Bacillus thuringiensis subsp. Medellin 1997

8/6/39 0010626299 BIOSIS NO.: 199699260359
Poplar (Populus nigra L.) plants transformed with a Bacillus thuringiensis toxin gene: Insecticidal activity and genomic analysis 1996

8/6/40 0010468263 BIOSIS NO.: 199699102323
High-level transcription of the cryIIIA toxin gene of Bacillus thuringiensis depends on a second promoter located 600 bp upstream of the translational state site 1996

8/6/41 0010124958 BIOSIS NO.: 199698592791
Thermo-inducible expression of delta endotoxin gene of Bacillus thuringiensis HD1 derived under lambda P-L promoter in Escherichia coli 199

8/6/42 0009957043 BIOSIS NO.: 199598424876
A cloning of a capsule operon of anthracic microbe and its use for identification of virulent strains of Bacillus anthracis 1994

8/6/43 0009771838 BIOSIS NO.: 199598239671
The Insecticidal CryIB Crystal Protein of Bacillus thuringiensis ssp. thuringiensis Has Dual Specificity to Coleopteran and Lepidopteran Larva 1995

8/6/44 0009536181 BIOSIS NO.: 199598004014
Elucidation of the mechanism of CryIIIA overproduction in a mutagenized strain of Bacillus thuringiensis var. tenebrionis 1994

8/6/45 0009427981 BIOSIS NO.: 199497449266
Insect-resistant chrysanthemum calluses by introduction of a Bacillus thuringiensis crystal protein gene 1993

8/6/46 0008922591 BIOSIS NO.: 199396087007
Molecular cloning genes for threonine biosynthesis of Propionibacterium shermani 1993

8/6/47 0008863311 BIOSIS NO.: 199396027727
Full expression of the cryIIIA toxin gene of Bacillus thuringiensis requires a distant upstream DNA sequence affecting transcription 1993

8/6/48 0008838807 BIOSIS NO.: 199396003223
Cloning of a novel cryIC-type gene from a strain of Bacillus thuringiensis ssp. Galleriae 1993

8/6/49 0008794149 BIOSIS NO.: 199395096415
A complete physical map of a Bacillus thuringiensis chromosome 1993

8/6/50 0008735961 BIOSIS NO.: 199395038227
Heterologous expression of Bacillus thuringiensis var. tenebrionis toxin gene in Escherichia coli 1992

8/6/51 0008701711 BIOSIS NO.: 199395003977
Genomic amplification and expression of delta-endotoxin fragment of Bacillus thuringiensis 1992

8/6/52 0008243858 BIOSIS NO.: 199293086749
INSECTICIDAL PROPERTIES OF A CRYSTAL PROTEIN GENE PRODUCT ISOLATED FROM BACILLUS- THURINGIENSIS -SSP-KENYAE 1992

8/6/53 0007728676 BIOSIS NO.: 199191111567
TWO STRUCTURAL DOMAINS AS A GENERAL FOLD OF THE TOXIC FRAGMENT OF THE BACILLUS- THURINGIENSIS DELTA ENDOTOXINS 1991

8/6/54 0007265814 BIOSIS NO.: 199090050293
MOLECULAR CLONING OF THE 130-KILODALTON MOSQUITOCIDAL DELTA ENDOTOXIN GENE OF BACILLUS- THURINGIENSIS -SSP-ISRAELENSIS IN BACILLUS-SPHAERICUS 1990

8/6/55 0006746108 BIOSIS NO.: 198988061223
GENE DOSAGE EFFECT ON THE EXPRESSION OF THE DELTA ENDOTOXIN GENES OF BACILLUS- THURINGIENSIS -SSP-KURSTAKI IN BACILLUS-SUBTILIS AND BACILLUS-MEGATERIUM 1989

8/6/56 0006622292 BIOSIS NO.: 198987070183
INVOLVEMENT OF TN-4430 IN TRANSFER OF BACILLUS-ANTHRACIS PLASMIDS MEDIATED BY BACILLUS- THURINGIENSIS PLASMID PXO-12 1989

8/6/57 0006239091 BIOSIS NO.: 198886079012
MONOCLONAL ANTIBODY ANALYSIS AND INSECTICIDAL SPECTRUM OF THREE TYPES OF LEPIDOPTERAN-SPECIFIC INSECTICIDAL CRYSTAL PROTEINS OF BACILLUS- THURINGIENSIS 1988

8/6/58 0006212305 BIOSIS NO.: 198886052226
THE MOSQUITO LARVICIDAL ACTIVITY OF 130-KDA DELTA ENDOTOXIN OF BACILLUS- THURINGIENSIS -VAR-ISRAELENSIS RESIDES IN THE 72-KDA AMINO-TERMINAL FRAGMENT 1988

8/6/59 0006163148 BIOSIS NO.: 198886003069
INSECT RESISTANCE IN TRANSGENIC PLANTS EXPRESSING BACILLUS- THURINGIENSIS TOXIN GENES 1987

8/6/60 0006163143 BIOSIS NO.: 198886003064
COMMON FEATURES OF BACILLUS- THURINGIENSIS TOXINS SPECIFIC FOR DIPTERA AND LEPIDOPTERA 1988

8/6/61 0006087609 BIOSIS NO.: 198885056500
PLASMID LOCATION CLONING AND SEQUENCE ANALYSIS OF THE GENE ENCODING A 27.3-KILODALTON CYTOLYTIC PROTEIN FROM BACILLUS- THURINGIENSIS -SSP-MORRISONI PG-14 1987

8/6/62 0006046522 BIOSIS NO.: 198885015413
MOLECULAR CLONING AND CHARACTERIZATION OF THE INSECTICIDAL CRYSTAL PROTEIN GENE OF BACILLUS- THURINGIENSIS -VAR-TENEBRIONIS 1987

8/6/63 0005701122 BIOSIS NO.: 198784055271
CLONING AND HETEROLOGOUS EXPRESSION OF AN INSECTICIDAL DELTA ENDOTOXIN GENE FROM BACILLUS- THURINGIENSIS -VAR-AIZAWAI IC1 TOXIC TO BOTH LEPIDOPTERA AND DIPTERA 1987

8/6/64 0005654645 BIOSIS NO.: 198784008794
ENGINEERING OF INSECT RESISTANCE BY EXPRESSING A BACILLUS- THURINGIENSIS GENE IN PLANTS 1986

8/6/65 0005616844 BIOSIS NO.: 198783095735
TOXIC TRYPSIN DIGEST FRAGMENT FROM THE BACILLUS- THURINGIENSIS PARASPORAL PROTEIN 1987

8/6/66 0005596077 BIOSIS NO.: 198783074968
CHARACTERIZATION OF THE GENE ENCODING THE HEMOLYTIC TOXIN AND THE MOSQUITOCIDAL DELTA ENDOTOXIN OF BACILLUS- THURINGIENSIS -ISRAELENSIS 1986

8/6/67 0005579495 BIOSIS NO.: 198783058386
PURIFICATION AND CHARACTERIZATION OF THE ACTIVE FRAGMENT FROM BACILLUS- THURINGIENSIS DELTA TOXIN 1986

8/6/68 0005534242 BIOSIS NO.: 198783013133
INSECTICIDAL ACTIVITY OF BIPYRAMIDAL AND CUBOIDAL INCLUSIONS OF DELTA ENDOTOXIN AND DISTRIBUTION OF THEIR ANTIGENS AMONG VARIOUS STRAINS OF BACILLUS- THURINGIENSIS 1986

8/6/69 0005264825 BIOSIS NO.: 198682111212
BACILLUS- THURINGIENSIS -VAR-ISRAELENSIS DELTA ENDOTOXIN NUCLEOTIDE SEQUENCE AND CHARACTERIZATION OF THE TRANSCRIPTS IN BACILLUS- THURINGIENSIS AND ESCHERICHIA-COLI 1986

8/6/70 0005197050 BIOSIS NO.: 198682043437
CLONING AND EXPRESSION OF THE LEPIDOPTERAN TOXIN PRODUCED BY BACILLUS- THURINGIENSIS -VAR- THURINGIENSIS IN ESCHERICHIA-COLI 1986

8/6/71 0005127000 BIOSIS NO.: 198681090891
MODE OF ACTION OF BIPYRAMIDAL DELTA ENDOTOXIN OF BACILLUS- THURINGIENSIS -SSP-KURSTAKI HD-1 1986

8/6/72 0004640586 BIOSIS NO.: 198579059485
ISOLATION AND ASSAY OF THE TOXIC COMPONENT FROM THE CRYSTALS OF BACILLUS- THURINGIENSIS -VAR-ISRAELENSIS 198

8/6/73 0003872627 BIOSIS NO.: 198375056570
CLONING AND LOCALIZATION OF THE LEPIDOPTERAN PRO TOXIN GENE OF BACILLUS- THURINGIENSIS -SSP-KURSTAKI 1982

8/7/67 DIALOG(R)File 5:Biosis Previews(R) (c) 2004 BIOSIS. All rts. reserv.
0005579495 BIOSIS NO.: 198783058386
PURIFICATION AND CHARACTERIZATION OF THE ACTIVE FRAGMENT FROM BACILLUS- THURINGIENSIS DELTA TOXIN
AUTHOR: TYSKI S (Reprint); FUJII Y; LAI C-Y
AUTHOR ADDRESS: DEP OF PROTEIN BIOCHEMISTRY, ROCHE RES CENT, HOFFMANN-LA ROCHE INC, NUTLEY, N 07110, USA**USA
JOURNAL: Biochemical and Biophysical Research Communications 141 (1): p 106-111 1986 ISSN: 0006-291X
DOCUMENT TYPE: Article RECORD TYPE: Abstract LANGUAGE: ENGLISH
ABSTRACT: Limited tryptic hydrolysis of a partially purified delta- toxin (Mr=100,000) from Bacillus thuringiensis , has produc a polypeptide fragment of Mr=60,000 containing the full biological activity. The fragment was the only polypeptide observed the polyacrylamide-gel electrophoresis of the delta- toxin after treatment with trypsin and could be purified by DEAE-cellulos chromatography. Amino acid and partial sequence analyses indicate that the 60,000 Mr fragment has been derived from the mid-section of the holotoxin peptide; over 80% of Lys, 65% of Pro and 50% of His residues in the holotoxin have been lost in active fragment . This section must contain the active site since its specific insecticidal activity is approximately twice that of t holotoxin. The active fragment shows complete cross-reactivity with the antiserum raised against the native toxin , and appeared to posses higher thermal stability than the mother protein. It provides a powerful tool for studies of the structure involved in the insecticidal activity.

8/7/71 DIALOG(R)File 5:Biosis Previews(R) (c) 2004 BIOSIS. All rts. reserv.
0005127000 BIOSIS NO.: 198681090891
MODE OF ACTION OF BIPYRAMIDAL DELTA ENDOTOXIN OF BACILLUS- THURINGIENSIS -SSP-KURSTAKI HD-1
AUTHOR: TOJO A (Reprint)
AUTHOR ADDRESS: INST BIOLOGICAL CONTROL, FAC AGRICULTURE, KYUSHU UNIV, FUKUOKA 812, JAPAN**JAPA
JOURNAL: Applied and Environmental Microbiology 51 (3): p630-633 1986 ISSN: 0099-2240 DOCUMENT TYPE: Article
RECORD TYPE: Abstract LANGUAGE: ENGLISH
ABSTRACT: The mode of action of toxic fragment (P-59) derived from bipyramidal-shaped .delta.-endotoxin of Bacillus thuringiensis subsp. kurstaki HD-1 on the silkworm Bombyx mori was investigated. An enzyme-linked immunosorbent assay showed that there was no translocation of P-59 from the gut lumen to the hemocoel. When membrane vesicles prepared from silkworm midgut were incubated with P-59, normally smooth surface of vesicles became rough, and patch formation was observed on the surface. Vesicles treated with P-59 tended to agglutinate. The vesicle-denaturing activity of a 130,000-dalton subunit protein of bipyramidal toxin was enhanced by treatment with a gut juice protease of the silkworm. P-59 did not caus any uncoupling effect on mitochondria of the silkworm midgut. These results suggest that the attacking site of this toxin is n the mitochondrion but the cell membrane of the susceptible cell.

8/7/72 DIALOG(R)File 5:Biosis Previews(R) (c) 2004 BIOSIS. All rts. reserv.
0004640586 BIOSIS NO.: 198579059485
ISOLATION AND ASSAY OF THE TOXIC COMPONENT FROM THE CRYSTALS OF BACILLUS- THURINGIENSIS -VAR-ISRAELENSIS
AUTHOR: DAVIDSON E W (Reprint); YAMAMOTO T
AUTHOR ADDRESS: DEP ZOOLOGY, ARIZ STATE UNIV, TEMPE, AZ 85287, USA**USA
JOURNAL: Current Microbiology 11 (3): p171-174 1984 ISSN: 0343-8651 DOCUMENT TYPE: Article
RECORD TYPE: Abstract LANGUAGE: ENGLISH
ABSTRACT: The 25-Kdal [kilodalton] fragment of the 28-Kdal toxic protein extracted from B. thuringiensis var. israelensis crystals is responsible for the insecticidal, cytolytic, hemolytic and mouse-lethal activities of the crude toxin extract. This activity has no relation to the hemolysin produced by other strains of B. thuringiensis . This protein was rich in the amino acid Asp and Glu, but did not contain Cys.

Set	Items	Description
S1	2075	THURINGIENSIS
S2	23273	TOXIN
S3	784	S1 AND S2
S4	26163	PROTEOL?
S5	240	S3 AND S4
S6	58918	FRAGMENT
S7	537	S3 AND S6
S8	324	S7 NOT S5
S9	29237	TRUNCAT?
S10	80632	DELET?
S11	93362	S9 OR S10
S12	181	(S2 (S) S11) AND S1

12/6/165 00181662
PREVENTION OF Bt RESISTANCE DEVELOPMENT PREVENTION DU DEVELOPPEMENT DE LA RESISTANCE AU Bt
Publication Language: German Fulltext Availability: Detailed Description Claims Fulltext Word Count: 17050
Publication Year: 1990

12/6/166 00176611
SYNTHETIC PLANT GENES AND METHOD FOR PREPARATION GENES VEGETAUX SYNTHETIQUES ET PROCEDE DE PREPARATION
Publication Language: English Fulltext Availability: Detailed Description Claims Fulltext Word Count: 28095
Publication Year: 1990

12/6/167 00175982
PLANTS TRANSFORMED TO PRODUCE BACILLUS THURINGIENSIS INSECTICIDAL TOXINS PLANTES TRANSFORMEES POUR PRODUIRE DES TOXINES INSECTICIDES DE BACILLUS THURINGIENSIS
Publication Language: German Fulltext Availability: Detailed Description Claims Fulltext Word Count: 8946
Publication Year: 1990

12/6/168 00169986
RECOMBINANT DNA CODING FOR BACILLUS THURINGIENSIS ENDOTOXIN ADN DE RECOMBINAISON CODANT POUR L'ENDOTOXINE BACILLUS THURINGIENSIS
Publication Language: English Fulltext Availability: Detailed Description Claims Fulltext Word Count: 4376
Publication Year: 1990

12/6/169 00169354
PLANTS TRANSFORMED WITH A DNA SEQUENCE FROM BACILLUS THURINGIENSIS LETHAL TO LEPIDOPTERA PLANTES TRANSFORMEES A L'AIDE D'UNE SEQUENCE D'ADN DE BACILLUS THURINGIENSIS MORTEL POUR LES LEPIDOPTERES
Publication Language: English Fulltext Availability: Detailed Description Claims Fulltext Word Count: 8997
Publication Year: 1990

12/6/170 00161227 **Image available**
BACILLUS THURINGIENSIS VAR. ISRAELENSIS CRYD TOXIN GENE, PROTEIN AND RELATED INSECTICIDE COMPOSITIONS GENE DE TOXINE CRYD DE BACILLUS THURINGIENSIS VAR. ISRAELENSIS, PROTEINE, ET COMPOSITIONS D'INSECTICIDE S'Y RAPPORTANT
Publication Language: English Fulltext Availability: Detailed Description Claims Fulltext Word Count: 12079
Publication Year: 1989

12/6/171 00158497 **Image available**
PRODUCTION OF PROTEINS IN PLANTS PRODUCTION DE PROTEINES DANS DES PLANTES
Publication Language: English Fulltext Availability: Detailed Description Claims Fulltext Word Count: 12937
Publication Year: 1989

12/6/172 00155149
PLANTS TRANSFORMED WITH A DNA SEQUENCE FROM BACILLUS THURINGIENSISPLANTES TRANSFORMEES A L'AIDE D'UNE SEQUENCE D'ADN DE BACILLUS THURINGIENSIS
Publication Language: English Fulltext Availability: Detailed Description Claims Fulltext Word Count: 6601
Publication Year: 1989

12/6/173 00153393
NEW TOXIN-ENCODING DNA FRAGMENTS FROM BACILLUS THURINGIENSIS SUBSP. ISRAELENSIS NOUVEAUX FRAGMENTS D'ADN CODANT POUR DES TOXINES ET OBTENUS A PARTIR DU BACILLUS THURINGIENSIS SOUS-ESPECE ISRAELENSIS
Publication Language: English Fulltext Availability: Detailed Description Claims Fulltext Word Count: 7646
Publication Year: 1988

12/6/174 00152900 **Image available**
NUCLEOTIDE SEQUENCES CODING FOR POLYPEPTIDES EXERCISING A LARVICIDAL EFFECT IN LEPIDOPTERA SEQUENCES DE NUCLEOTIDIQUES CODANT POUR DES POLYPEPTIDES DOTES D'UNE ACTIVITE LARVICIDE VIS-A-VIS DE LEPIDOPTERES
Publication Language: French Fulltext Availability: Detailed Description Claims Fulltext Word Count: 13893
Publication Year: 1988

12/6/175 00151972
NOVEL BACILLUS THURINGIENSIS STRAINS, METHOD FOR THEIR ISOLATION AND RELATED INSECTICIDAL COMPOSITIONS NOUVELLES SOUCHES DE BACILLUS THURINGIENSIS , PROCEDE PERMETTANT LEUR ISOLATION ET COMPOSITIONS INSECTICIDES S'Y RAPPORTANT
Publication Language: English Fulltext Availability: Detailed Description Claims Fulltext Word Count: 7983
Publication Year: 1988

12/6/176 00149737
HYBRID GENES INCORPORATING A DNA FRAGMENT CONTAINING A GENE CODING FOR AN INSECTICIDAL PROTEIN, PLASMIDS TRANSFORMED CYANOBACTERIA EXPRESSING SUCH PROTEIN AND METHOD FOR USE AS A BIOCONTROL AGENT GENE HYBRIDE A FRAGMENT D'ADN CONTENANT LE GENE DE CODAGE D'UNE PROTEINE INSECTICIDE, PLASMIDES, CYNOBACTERIE TRANSFORMEES D'EXPRESSION DE CETTE PROTEINE ET LEUR PROCEDE D'UTILISATION COMME AGENT BIOCIDE
Publication Language: English Fulltext Availability: Detailed Description Claims Fulltext Word Count: 8217
Publication Year: 1988

12/6/177 00145146
METHOD FOR PRODUCING A HETEROLOGOUS PROTEIN IN INSECT CELLS PROCEDE DE PRODUCTION DE PROTEINES HETEROLOGUES DANS DES CELLULES D'INSECTES
Publication Language: English Fulltext Availability: Detailed Description Claims Fulltext Word Count: 4846
Publication Year: 1988

12/6/178 00138443
AGRICULTURAL-CHEMICAL-PRODUCING ENDOSYMBIOTIC MICROORGANISMS AND METHOD OF PREPARING AND USING SAME MICRO-ORGANISMES ENDOSYMBIOTIQUES FABRICANT DES PRODUITS CHIMIQUES AGRICOLES, ET LEUR PROCEDE DE PREPARATION ET D'UTILISATION
Publication Language: English Fulltext Availability: Detailed Description Claims Fulltext Word Count: 24446
Publication Year: 1987

12/6/179 00132093 **Image available**
CYSTEINE-DEPLETED MUTEINS OF BIOLOGICALLY ACTIVE HUMAN TUMOR NECROSIS FACTOR PROTEINS MUTEINES DEPOURVUES DE CYSTEINE DE PROTEINES DU FACTEUR NECROTIQUE TUMORAL HUMAIN BIOLOGIQUEMENT ACTIF
Publication Language: English Fulltext Availability: Detailed Description Claims Fulltext Word Count: 8989
Publication Year: 1986

12/6, K/180 00129030 **Image available**
BACILLUS THURINGIENSIS CRYSTAL PROTEIN GENE TOXIN SEGMENTSEGMENT DE LA TOXINE DU GENE DE LA PROTEINE CRISTALLINE DU BACILLUS THURINGIENSIS
Patent: WO 8601536 A1 19860313
ublication Language: English Fulltext Availability: Detailed Description Claims Fulltext Word Count: 11702
Publication Year: 1986

English Abstract A DNA fragment that codes for the portion of Bacillus thuringiensis crystal protein peptide that is toxic to lepidopteran insects The invention also comprises the DNA...
...invention demonstrates that the disclosed toxin-encoding DNA fragment (referred to herein as the Bacillus thuringiensis crystal protein gene toxin segment) is expressible in recombinant host organisms, and that the "toxin...
French Abstract Un fragment d'ADN code la partie du peptide de proteine cristalline du Bacillus thuringiensis qui est toxique pour des insect lepidopteres. L'invention porte egalement sur les sequences d... ...la toxine (appele segment de la toxine du gene de la proteine cristalline du Bacillus thuringiensis peut etre exprime dans des organismes recombinants hotes, et que le produit de la proteine...
Detailed Description ... this invention relates to an expressible DNA fragment coding for the toxin portion of Bacillus thuringiensis crystal protein.
Background of the Invention As is well knownp Bacillus thuringiensis crystal protein is toxic to the larvae of a number of lepidopteran insects As a result preparations containing Racillma thuringiensis crystals are used commercially as a highly selective biological insecticidee Unfortunatelyr relatively high manufacturing costs...
...difficult for such insecticides to compete effectively with other commercially available products.
Wild-type Bacillus thuringiensis produce crystal protein only during sporulation. Such a growth phase limitation, particularly in an industrial...
...15, 1984 and August 21, 1984, respectivelyr to Schnepf and Whiteleyp disclose expression of Bacillus thuringiensis crystal protein by use o novel recombinant plasmids containing expressible heterologous DNA coding for crystal...
...disclose that genetically engineered bacterial host strainsr transformed by the novel recombinant plasmidsp express Bacillus thuringiensis crystal protein protoxin polypeptides, Such genetically engineered bacterial host strains express Bacillus thuringiansis crystal protein protoxin polypeptide,at all stages of growth.

It is now known that in the Bacillus thuringiensis subspecies that synthesize lepidopteran toxinsy the crystal protein crystal is composed of one or more...
...To that end it would be useful to identify the specific segment of a Bacillus thuringiensis crystal protein gene that codes for the toxin fragments It would also be useful to...gene, including some 51 and 31 flanking sequences. The start sites of transcription in Bacillus thuringiensis (Btl and Btll) and in Escherichia cnli (Ec) are indicated as well as the entire...
...It is an object of the present invention to identify the segment of a Bacillus thuringiensis crystal protein genee referred to herein as the 'toxin-encoding' segment, which codes for the...
...present invention to determine the DNA sequence of the 'toxin-encodingo segment of a Bacillus thuringiensis crystal protein gene.
It is a further object of the present invention to demonstrate that a Bacillus thuringiensis crystal protein "toxin-encoding' gene segment is expressible in transformed recombinant host organisms. It is...
...protein gene; FIGURE 2 (views A and B) shows the DNA sequence of a Bacillus thuringiensis crystal protein gene;
FIGURE 3 (Views A and B) shows restriction maps of pES1 and...
...shows the construction strategy for the 31-end deletions of a crystal protein @5 Bacillug thuringiensis crystal protein. Nucleotides 4140 through 4185 comprise the transcriptional terminator for this gene. FIGURE 3A...that is itself :oxic to lepidopteran insects. The phrase 'amino terminal 55% of the Back1lus thuringiensis crystal protein gene' means the amino terminal 645 codons of the crystal protein gene as...
...used hereinr the phrase "final 74 codons" means the final 74 codons of the Bacillus thuringiensis crystal protein gene as shown in FIGURES-2A and 2B. More specificallyr the final 74..
. ...1982; Schnepf and Whiteley, 1981)o We have cloned a crystal protein gene from Bacillus thuringiensis subspecies kurstaki HD-l@Dipel and have shown that the gene is located on a...well with molecular weights determined for the protoxins from Bacillus thucingiensis subsp. Kurstaki and subsp. thuringiensis . In addition the deduced amino acid composition is very similar to the chemically determined amino...
...purified protoxin of Bacillus thuringtensts subsp. kurstaki (5ga Table II supra.) Knowing that the Bacillus thuringiensis crystal protein protoxin can be cleaved to yield a. smaller toxin fragmentr we created recombinant EscheriChig gaU strains bearing deletions and fusions of the crystal protein gene and then analyzed the proteins they produced to delineate the portion of the gene which encodes the toxin peptideo Construction of these ' deletion and fusion' plasmids is discussed in the Materials and Methods section? z112ra; also zge
FIGURES 3 The truncated peptides produced by recombinant hosts transformed by these plasmids are discussed in Examples II through V. Very generallyr the truncated peptides produced by host strains transformed by the wdeletion and fusion* plasmids indicate that the amino terminal 55% of the crystal protein gene encodes sufficient information to produce a lepidopteran toxin . More specificallyr the " deletion and fusion" results indicate that deletions to the 50th codon from the 51 end of the genel or to the 603rd codon from the 31 end abolish toxicityr while deletions to the 10th codon from the 51 end, or to the 645th codon from the...sequence was required to determine which portion of the crystal protein gene coded for the ' toxin ' portion of the crystal proteinr the DNA sequence for the remainder of the gene was...
...from bases 1845 to 3831 in FIGURE 1B was sequenced primarily by the DNAse I deletion method of Hong (1982) (zjeje numbered sites in FIGURE 1B) but some gaps in the coding strand sequence were filled in by obtaining deletions through partial Sau3AI digestion (asterisks in FIGURE 1B), The complete sequence was determined for both...protoxins f rom Raci-tTug thuringi7ensks subsp. karstalck (Bulla, et al,r 1981) and subsp. thuringiensis (Huberr et al,r 1981). The deduced amino acid composition is very similar to the...the crystal protein gene encodes a toxic peptide and that the 31 end of the toxin -encoding portion was in the HindIII-E fragment. To determine the 31 end of this region more preciselyr a number of deleted plasmids were constructed. See FIGURE 6A. The crystal
protein encoding sequence in these plasmids terminated... Claim... and 2B. 2e A composition of matter comprising the amino terminal 55% of a Bacitlas thuringiensis crystal protein gene as shown in FIGURES 2A and 2B.
39 A DNA sequence having...

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METHODS AND VECTORS FOR TRANSFORMATION OF PLANT CELLS PROCEDES ET VECTEURS POUR LA TRANSFORMATION DE CELLULES VEGETALES
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